EXAMINING THE IMPACT OF CYBERBULLYING VICTIMIZATION IN A POSTSECONDARY INSTITUTION: UTILIZING GENERAL STRAIN THEORY TO EXPLAIN THE USE OF NEGATIVE COPING MECHANISMS

By

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ABSTRACT

EXAMINING THE IMPACT OF CYBERVICTIMIZATION IN A POSTSECONDARY INSTITUTION: UTILIZING GENERAL STRAIN THEORY TO EXPLAIN THE USE OF NEGATIVE COPING MECHANISMS

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Similar to the consequences of victimization associated with younger populations, cyberbullying victims enrolled in postsecondary institutions report having poor concentration; somatic complaints such as headaches and stomach issues; feelings of vulnerability; elevated levels of depression, suicidal thoughts/ideations, paranoia, anxiety, and fear; and negatively cope by using substances, retaliating, or avoiding school work and activities (Faucher et al., 2014; Rivituson, 2014; Rospenda et al., 2013; Schenk & Fremouw, 2012). Existing research examining the prevalence, impact, and coping mechanisms used by bullying and cyberbullying victims predominately focuses on primary and secondary school children, however, recent research suggests that these behaviors also influence postsecondary students (Faucher, Jackson & Cassidy, 2014; Gibb & Devereux, 2014; Kowalski, Giumetti, Schroeder & Reese, 2012; Rivituso, 2014; Lutgen-Sandvik, 2008; Metsela, 2014; Rospenda, Richman, Wolff, & Burke, 2013; Samnani & Singh, 2012; Schenk & Fremouw, 2012; Sinkkonen, Puhakka & Meriläinen, 2014). Given the negative and potentially lethal consequences associated with cyber-victimization among younger populations it is important to explore this phenomenon within a variety of contexts.

Therefore, to help support and extend on existing research, the current study used general strain theory to examine the relationship between cyber-victimization among postsecondary

students, the negative emotional states of anxiety, depression, and stress, and the utilization of negative coping mechanisms including online and offline delinquent behaviors, both internal (self-harm and suicidal thoughts/ideations) and external (online and offline bullying perpetration). A sample of 436 undergraduates at a large Midwestern university completed an online self-report survey. Results indicated that cyberbullying is common among postsecondary students. However, the negative emotional states of anxiety, depression, and stress did not mediate the relationship between cyberbullying victimization and negative coping mechanisms as hypothesized. Only stress mediates the relationship between cyberbullying victimization and self-harming behaviors. Implication and future directions for research are discussed.

This dissertation is dedicated to my grandfather James Nickisch.
Thank you for always believing in me.

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CHAPTER 1: Introduction

Emerging adults, those between the ages of 18-25 years (Arnett, 2014) are more dependent on technology than prior generations and use the Internet more often than any other age group (David-Ferdon & Hertz, 2007; Law, Shapka, Hymel, Olson, & Waterhouse, 2012; Smith, Rainie & Zickuhr, 2011). Postsecondary students represent a growing proportion of our nation's population and are in part defining our world. Arnett (2014) refers to this age group as emerging adults – individuals that are becoming more independent in their communities. Compared to prior generations, these youth have become more dependent and have fostered new ways of using the Internet for social interaction, using a variety of social networking sites and applications such as Facebook, Vine, and YouTube on a regular basis via different devices including tablets, laptops or desktop computers, and smartphones (Madden, Lenhart, Duggan, Cortesi, & Gasser, 2013; Smith et al., 2011). Over 96% of postsecondary students own their own cell phone and 88% own laptops (Smith et al., 2011).

In addition to the growing importance of technologies in postsecondary education and curriculum, technology has become an important social tool for postsecondary students, affording them increased connectivity with family and friends who are remote, and to create new virtual social platforms. The maintenance of connections to family and prior friendships is an important component of making a healthy transition into college (Arnett, 2014; Hiester, Nordstrom & Swenson, 2009; Parade, Leerkes & Blankson, 2010). However, as technology continues to advance and the number of people online increases, so does the chance of being victimized online, a phenomenon known as cyberbullying (Hinduja & Patchin, 2008, 2015; Juvonen & Gross, 2008; Marcum, Higgins, Freiburger & Ricketts, 2014; Mishna, Khoury-Kassabri, Gadalla, & Daciuk, 2012; Ybarra & Mitchell, 2004; Ybarra, Mitchell, Wolak, &

Finkelhor, 2006). There are eight distinct types of behaviors that define and differentiate cyberbullying (Willard, 2007). These include: *denigration* (sending or posting gossip or rumors about a person), *flaming* (using inappropriate and aggressive language to fight online), *online harassment/cyberstalking* (repeatedly and intentionally sending malicious, threatening, or inappropriate messages to someone), i*mpersonation/masquerading* (pretending to be someone else to send or post harmful messages), *outing* (sharing someone's personal information or images online)*, trickery* (talking someone into sharing personal information and then sharing this information online), and *exclusion* (when a group or individual intentionally ignores or excludes someone from online activities). The platforms most frequently associated with cyberbullying include e-mail, phone calls, text messaging, picture/video clips, social networking sites, instant messaging, chat rooms, and websites and applications (Smith et al., 2008). Cyberbullying among postsecondary students most commonly occurs on social networking sites such as Facebook and YouTube, or occur via cell phones in the form of text messages/pictures or through instant messages (Walker, Sockman & Koehn, 2011). MacDonald and Roberts-Pittman (2010) found that among their postsecondary sample, 25% were cyberbullied on social networking sites, 21% were cyberbullied via text messages sent to their cell phones, 16% were cyberbullied by e-mail, 13% were cyberbullied through instant messages, almost 10% were cyberbullied in chat rooms, and nearly 7% of the students reported having negative things written about them or had images of them posted on a website.

Statement of the Problem

Existing research examining the prevalence, impact, and coping mechanisms used by bullying and cyberbullying victims predominately focuses on primary and secondary school children, arguing that bullying perpetration and victimization is highest during the elementary

years and decreases by the time students reach high school (Chapell et al., 2006; Nansal et al., 2001). However, recent research suggests that bullying and cyberbullying does not only take place among children in the schoolyard, but exists in both high school and postsecondary institutions (Faucher, Jackson & Cassidy, 2014; Gibb & Devereux, 2014; Kowalski, Giumetti, Schroeder & Reese, 2012; Lutgen-Sandvik, 2008; Metsela, 2014; Rivituso, 2014; Rospenda, Richman, Wolff, & Burke, 2013; Samnani & Singh, 2012; Schenk & Fremouw, 2012; Sinkkonen, Puhakka & Meriläinen, 2014). Between 10% and 28% of postsecondary students reported being cyberbullied (Francisco, Veiga Simão, Ferreira, & Martins, 2015; Kraft & Wang, 2010; McDonald & Roberts-Pittman, 2010). Perhaps more disconcerting are the estimates that 8% of postsecondary students have reported cyberbullying others (Francisco, et al., 2015; Kraft & Wang, 2010; McDonald & Roberts-Pittman, 2010). Additionally, 30% of postsecondary students reported that their first experience with cyberbullying occurred during college (Kowalski et al., 2012).

Researchers understand the effects victimization has on young children and adolescents, however, only a few studies have focused on the consequences and coping mechanisms used among postsecondary students (Coleyshaw, 2010; Faucher, et al., 2014; Gibb & Devereux, 2014; Sinkkonen, et al., 2014). More research is needed to understand how cyberbully victimization in postsecondary students affects emotional well-being. Examining potential coping mechanisms is also imperative, particularly the use of negative or destructive coping mechanisms. Behaviors that would be considered destructive coping mechanisms could include self-harming behaviors, suicidal thought or ideation, self-cyberbullying, and online and offline bullying perpetration (Hay & Meldrum, 2010; Hay, Meldrum & Mann, 2010; Patchin & Hinduja, 2010b; Schenk & Fremouw, 2012). *Self-cyberbullying* is a phenomenon that occurs when someone anonymously

and publicly posts hurtful, mean or harassing messages about oneself online (Englander, 2012). Few studies have examined the relationship between cyberbullying victimization and destructive coping mechanisms (refer to Hay & Meldrum, 2010; Hay, Meldrum & Mann, 2010; Patchin & Hinduja, 2010b; Schenk & Fremouw, 2012), and none of these studies have focused specifically on postsecondary students. In addition, no research to this author's knowledge, explores the potentially mediating role negative emotions play in regards to cyberbullying victimization among postsecondary students and the use of self-harming behaviors, self-cyberbullying, and offline traditional face-to-face bullying perpetration and online cyberbullying perpetration. In order to better understand the relationships among these variables, this study used general strain theory as a theoretical framework. This framework guided the literature review, research hypotheses, and interpretation of study results.

Given the negative and potentially lethal consequences associated with cyber-victimization among younger populations it is important to explore this phenomenon within a variety of contexts. Compared to non-victimized youth, cyberbullied youth report lower levels of self-esteem, self-worth, and social competence; more frequent psychosomatic complaints, such as headache and stomach aches; higher levels of depression, anxiety, irritability, worthlessness, loneliness, and suicidal thoughts, ideations, and behaviors; engage in more delinquent and antisocial behaviors (Kowalski & Limber, 2013); and use more drugs and alcohol to cope (Espelage & Swearer, 2011; Kowalski & Limber, 2013; Nation, Vieno, Perkins, & Massimo, 2008). Similar to the consequences of victimization associated with younger populations, postsecondary cyberbullying victims report having poor concentration; somatic complaints such as headaches and stomach issues; feelings of vulnerability; elevated levels of depression, suicidal thoughts/ideations, paranoia, anxiety, and fear; and negatively cope by using substances,

retaliating, or avoiding school work and activities (Faucher et al., 2014; Rivituson, 2014; Rospenda et al., 2013; Schenk & Fremouw, 2012).

Theoretical Framework

General strain theory is a criminological theory which suggests that when an individual feels as if they have been unfairly mistreated, particularly if they are young, they become frustrated and angry, and are at an increased risk of responding to these heightened negative emotions by engaging in delinquent or aggressive behavior (Agnew, 1992, 2001, 2010). Any relationship or event where an individual feels they have been mistreated can cause what Agnew (1992) defines as 'strain.' Agnew believes there are two types of strain, objective or subjective. Objective strain is an unpleasant external stimuli that is commonly rejected by most people whereas subjective strain refers to conditions or events that are disliked only by certain people (Agnew 1992, 2001, 2010; Agnew, Brezina, Wright, & Cullen, 2002; Froggio, 2007; Harrell, 2007). Examples of objective strain include physical assault, lack of protection, or lack of financial stability, which are conditions viewed as negative by most people (Agnew, 1992; Froggio, 2007). Subjective strain is highly variable and can be influenced by a person's personality traits, resources, and life circumstances (Agnew, 1992; Froggio, 2007).

General strain theory identifies three main sources of strain which occur when others: (1) prevent or threaten to prevent an individual from achieving their personal goals related to personal autonomy, relationships, education, and status; (2) remove or threaten to remove an individual's personal possessions or interfere with the stability of their relationship(s); and, (3) threaten or cause actual harm to an individual (Agnew, 2010). These different sources of strain can produce a range of negative emotions such as sadness, depression, frustration, and anger. These emotions create pressure for corrective action and delinquent behaviors (Agnew, 1992).

According to Agnew, the most likely emotion that leads to delinquent behavior is anger, which can lower one's inhibition, create a desire to seek revenge, have an energizing effect, and provide justification for delinquent behaviors. However, other emotions such as depression, fear, guilt or shame, can also lead to delinquency (Broidy & Agnew, 1997). For strain to lead to delinquent or aggressive behaviors it must: (1) occur for an extended period of time, (2) be high in magnitude, (3) be perceived as unjust, and (4) create enough pressure to endorse such behaviors (Agnew, 1992).

Most individuals respond to strain in legitimate and socially appropriate ways (Agnew, 1992). First, individuals may ignore or minimize the importance of the strain (Harrell, 2007). In doing so, the person may deny the importance of a goal; for example, saying, "I didn't want to be their friend anyway." Second, they may attempt to maximize positive outcomes and minimize negative ones (Agnew, 1992; Harrell, 2007). For example, an adolescent girl who is bullied by a group of peers after school may choose to join the after school drama club. She is engaging in an activity that she enjoys and is also avoiding the group of girls who bully her. Third, a person may adapt to strain by accepting responsibility for the strain (Agnew, 1992; Harrell, 2007). In this instance, a bullied teenager may adapt to strain by accepting responsibility for the bullying by telling himself that he deserves to be abused by others because he is a bad person. The last way of adapting to strain is through vengeful behaviors (Agnew, 1992; Harrell, 2007). This is when someone blames another person or entity for the blockages they experience and seeks to retaliate in an effort to reduce the perceived strain (Agnew, 1992; Harrell, 2007). For example, a bullied adolescent girl may create a fake profile on Facebook to trick another girl who bullies her into believing she is liked by a boy but then uses the information to victimize her bully.

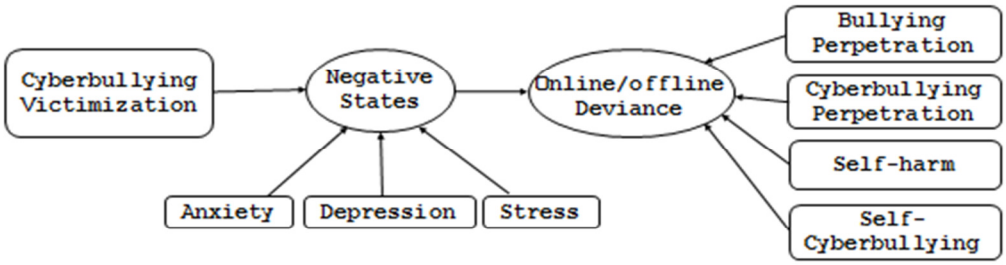
Agnew (2001) stated that being a victim of bullying could potentially lead to aggressive or delinquent behavior. Therefore, general strain theory appropriately fits with current bullying and cyberbullying research in that it explores how the strain of being bullied can potentially lead to internalized and externalized delinquent behaviors (Hay et al., 2010). Multiple studies provide support or partial support for utilizing general strain theory as a theoretical framework for understanding the negative outcomes of bullying and cyberbullying victimization (Hay & Meldrum, 2010; Hay et al., 2010; Hinduja & Patchin, 2007, 2010; Walrave & Heirman, 2011). Most research that applies general strain theory to the negative outcome of bullying focuses on externalized aggressive behaviors committed against others, such as when an adolescent boy who is bullied at school brings a knife to school and threatens to hurt his classmates (Harrell, 2007; Hay & Meldrum, 2010; Patchin & Hinduja, 2010b; Walrave & Heirman, 2011). Recently, researchers have also used general strain theory to better understand internalized aggressive behaviors committed toward oneself such as self-harming behaviors and suicidal ideations (Hay & Meldrum, 2010; Hay et al., 2010).

This study used general strain theory to examine the relationship between cyber-victimization, the negative emotional states of anxiety, depression and stress, and the utilization of negative coping mechanisms (referred to as external and internal delinquent behavior to remain consistent with the terms used within general strain theory). As mentioned, general strain theory posits that when people feel mistreated they become upset and experience heightened negative emotions, such as frustration, and respond to blocked desires by engaging in delinquent behaviors (online/offline deviance). This study specifically explored online and offline delinquent behaviors, both internal (self-harm and self-cyberbullying) and external (online and offline bullying perpetration) (Agnew, 1992, 2001, 2010; Froggio, 2007; Harrell, 2007). In this

study, negative emotional states were conceptualized as reactions to the experience of being cyberbullied, which resulted in feelings of stress, depression, and/or anxiety. These negative emotional reactions were expected to influence an individual's use of either internal or external online or offline deviance as a way to cope with being victimized (Fig. 1.1).

Figure 1.1

Theoretical Framework



Study Overview

Purpose

This dissertation had two objectives: (1) it examined how being a victim of cyberbullying during college influences students' emotional states by comparing levels of self-reported anxiety, depression, and stress between self-reported victimized and non-victimized postsecondary students and (2) it examined the ways in which these negative emotional states influence victims' internal and external delinquent behaviors. Specifically, internalized delinquent behaviors included the behaviors of self-harming and self-cyberbullying. Externalized delinquent behaviors included bullying and cyberbullying perpetration. To achieve the above goals, an online self-report survey was administered through Qualtrics, an online survey program, to current undergraduates at a large Midwestern university. Self-reported measures are the most commonly used method for ascertaining information about participants' subjective experiences (Graham, Bellmore, & Juvonen, 2003) and have been the method used for most studies that have investigated cyberbullying among postsecondary students (Francisco et al., 2015; MacDonald & Roberts-Pittman, 2010; Rafferty & Vander Ven, 2014; Schenk & Fremouw, 2012; Walker et al., 2011).

Study Significance and Rationale

Researchers are just beginning to explore cyberbullying behaviors among postsecondary students but more research is needed. There is currently a gap in the literature, particularly in regards to the prevalence rate of victimization, possible differences among those who experience cyberbullying and those who do not, potential mediating factors which may influence cyber-victimization, negative emotional states associated with victimization, and the utilization of negative coping mechanisms by cyberbullying victims. Therefore, this study helps fill in the gaps of current literature by exploring cyberbullying among postsecondary students. Specifically, this

study used general strain theory to examine how cyber-victimization influences an individual to engage in external and internal delinquent behavior. Although general strain theory has been used to guide other work exploring cyber-victimization among postsecondary students (Rivituso, 2014), it has not been used to examine if negative emotional states, such as depression, anxiety, and stress, influence internalized and externalized delinquent behavior. Testing the applicability of theory is important in research as it informs research hypotheses and can help guide and make sense of research findings, as well as provide insight regarding prevention and intervention programs for the emotional outcomes and possible delinquent behaviors that may stem from such victimization.

In the current study, external delinquent behaviors included offline traditional face-to-face bully perpetration and online cyberbullying perpetration, while self-harming behaviors, and self-cyberbullying were considered internal deviate behaviors. *Self-cyberbullying* is a phenomenon that occurs when someone anonymously and publicly posts hurtful, mean or harassing messages about oneself online (Englander, 2012). It has been estimated that nearly 10% of undergraduates admitted to self-cyberbullying during high school (Englander, 2012; Patchin, 2013), yet this phenomenon remains unexplored within youth and postsecondary samples. This study explored self-cyberbullying in depth to determine if this new online form of self-harm is a potential negative coping mechanism which warrants more research in the future. Additionally, this study examined how victim's experience of anxiety, depression and stress, influenced the utilization of delinquent coping behaviors, something that has not yet been explored at the postsecondary level.

Research Questions and Hypotheses

The present study posited the following research questions and hypotheses:

RQ1: Do students who experience cyber-victimization during postsecondary experience higher levels of negative emotional states (anxiety, depression, and stress) compared to non-victims?

H1a: *Students who report experiencing cyber-victimization will report experiencing higher levels of anxiety than non-victimized students.*

H1b: *Students who report experiencing cyber-victimization will report experiencing higher levels of depression than non-victimized students.*

H1c: *Students who report experiencing cyber-victimization will report experiencing higher levels of stress than non-victimized students.*

RQ2: As posited by general strain theory, do negative emotional states influence the relationship between cyber-victimization and delinquent behavior?

H2a: *The negative emotional state of anxiety will mediate the relationship between cyber-victimization and external delinquent behavior.*

H2b: *The negative emotional state of anxiety will mediate the relationship between cyber-victimization and internal delinquent behavior.*

H2c: *The negative emotional state of depression will mediate the relationship between cyber-victimization and external delinquent behavior.*

H2d: *The negative emotional state of depression will mediate the relationship between cyber-victimization and internal delinquent behavior.*

H2e: *The negative emotional state of stress will mediate the relationship between cyber-victimization and external delinquent behavior.*

H2f: *The negative emotional state of stress will mediate the relationship between cyber-victimization and internal delinquent behavior.*

RQ3: Do postsecondary cyberbullying victims report higher levels of external and internal delinquent behaviors than non-victims?

H3a: *Students who identify as being victims of cyberbullying since attending postsecondary institutions will report engaging in traditional perpetration more often than non-victims.*

H3b: *Students who identify as being victims of cyberbullying since attending postsecondary institutions will report engaging in cyberbullying perpetration more often than non-victims.*

H3c: *Students who identify as being victims of cyberbullying since attending postsecondary institutions will report engaging in more self-harming behaviors than non-victims.*

H3d: *Students who identify as being victims of cyberbullying since attending postsecondary institutions will report engaging in more self-cyberbullying than non-victims.*

CHAPTER 2: Literature Review

This literature review defines bullying and cyberbullying, outlines various types of victimization, and reviews current literature regarding cyberbullying among postsecondary students. Next, in line with the conceptual model (see Fig. 1.1) informed by general strain theory and the research hypotheses, each component of the model is explored in more detail. Therefore, current literature in regards to the negative emotional states of anxiety, depression, and stress as it relates to victimization will be reviewed. Additionally, research regarding externalized (online and offline perpetration) and internalized (self-harm and self-cyberbullying) delinquent behaviors as they relate to cyber-victimization will be presented.

Defining Traditional Bullying and Cyberbullying

Researchers continue to debate the definition of cyberbullying, especially as it relates to traditional face-to-face bullying. Currently, most researchers conceptualize cyberbullying as an expression or extension of traditional face-to-face bullying (Aricak, 2009; Francisco et al., 2015; Gibb &Devereux, 2014; Kowalski et al., 2012; Li, 2007; Menesini et al., 2013; Rafferty & Vander Ven, 2014; Rivituso, 2014; Schenk & Frenouw, 2012; Schenk, Frenouw, Keelan, 2013; Willard, 2007). Therefore, throughout this dissertation the most common and accepted definitions in the field, defined below, are used to describe both traditional bullying and cyberbullying. Traditional and online bullying share many common characteristics. However, cyberbullying also has a variety of unique characteristics that differentiate it from traditional face-to-face bullying. These differences can influence how each type of bullying is experienced by the victim. The following sections explore the similarities and difference among both traditional bullying and cyberbullying.

Bullying

Bullying occurs when one "is exposed, repeatedly and over time, to negative actions" by one or more of their peers (Owleus, 1993, p. 9). There are three predominate features that distinguish bullying from other forms of aggressive behaviors. These include: (1) intentionality, (2) repetition over an extended period of time, and (3) an imbalance of power (Nasal et al., 2001; Olweus, 1993). Aggressive behaviors that are inadvertent or occur only once do not meet the specified criteria and are therefore considered peer harassment rather than bullying (Hinduja & Patchin, 2015).

Bullying has been categorized in a variety of ways (Hinduja & Patchin, 2015). Some researchers classify bullying behaviors as either direct or indirect aggressive behaviors (Hinduja & Patchin, 2015; Kaukiainen, et al, 2001; Langos, 2012; Owleus, 1978; Van der Wal, De Wit, & Hirasing, 2003). *Direct* (overt) bullying behaviors are aimed at a specific person while face-to-face and include behaviors such as hitting, kicking, pushing, name-calling, racial slurs, threats, and repetitive teasing. Conversely, *indirect* (covert) behaviors are more hidden. Examples include spreading gossip or rumors, socially excluding or isolating the victim, engaging in social sabotage, or other behaviors which negatively influence victims' interpersonal relationships (Bjorkqvist, Osterman, & Lagerspetz, 1994; Hinduja & Patchin, 2015; Kaukiainen, et al, 2001; Langos, 2012; Owleus, 1993; Van der Wal et al., 2003).

Cyberbullying

Multiple terms to describe aggressive behaviors that occur online or through technology are currently represented within the literature: *cyberbullying, cyber-aggression, electronic bullying, Internet bullying, Internet harassment, online harassment, text bullying, digital bullying, or online social cruelty* (Hinduja & Patchin, 2015; (Kowalski et al., 2012; Livingstone

& Smith, 2014). Some researchers prefer to use the term "cyberbullying" to describe aggressive behaviors in younger populations due to its association with childhood behaviors (see Gibb & Devereux, 2014; Hinduja & Patchin, 2015). However, cyberbullying is currently the most common term cited in literature investigating relevant behaviors at the postsecondary level (Cowie et al., 2013; Dilmac, 2009; Schenk & Fremouw, 2012; Snell & Englander, 2010; Walker et al., 2011; Zalaquett & Chatters, 2014). Therefore, the term cyberbullying is used throughout this dissertation.

Cyberbullying is considered an indirect form of bullying (Beran & Li, 2005; Dooley, Pyżalski, & Cross, 2009). Several researchers have attempted to operationally define the term cyberbullying. Early researchers exploring cyberbullying assumed it functioned in a similar manner as traditional face-to-face bullying and operationalized and measured it in similar ways (Beran & Li, 5005, 2008; Campbell, 2005; Li, 2007; Patchin & Hinduja, 2006; Slonje & Smith, 2008; Tokunaga, 2010). Willard (2007) defined cyberbullying as "a way of being cruel to others by sending or posting hurtful material or engaging in other forms of social aggression using the Internet and other digital technologies" (p. 1). Hinduja and Patchin (2015) further elaborated and operationalized the term as "willful and repeated harm inflicted through the use of computers, cell phones, and other electronic devices and usually involves an imbalance of power" (p. 11).

Despite the nuanced differences among the various definitions, most include the key components of Owleus' definition of traditional bullying– intent to harm, a power imbalance, and repetition over an extended period of time (Moore, Nakano, Enomoto & Suda, 2012; Nasal et al., 2001). However, these features may manifest themselves differently depending on the type of bullying they are associated with (Langos, 2012). For example, the power differential in cyberbullying does not necessarily pertain to physical stature, status, age, gender, or other

features common in traditional bullying. Instead, the power differential in cyberbullying may be based on technological competence, with the perpetrator having more advanced skills than their victim (Langos, 2012; Patchin & Hinduja, 2006). Additionally, the anonymity of the Internet can create a power differential since victims have little power over what type of information is spread and to whom, and are often unable to respond in an effective way (Livingstone & Smith, 2014; Slonje & Smith, 2008; Smith et al., 2008).

Although traditional bullying and cyberbullying are similar, they differ in a variety of ways. Unlike traditional bullying which tends to occur during school hours, cyberbullying has no time or space restrictions and provides little respite for victims (Kowalski & Limber, 2013). Information can be spread almost instantaneously to large numbers of people all around the world (Nansel, et al., 2001; Tokunaga, 2010). Furthermore, there is some degree of permanency once information is posted online (Dooley et al., 2009). Once posted, information or pictures can be forwarded, copied, re-posted, or saved on individual computers, phones, or a tablet, making it impossible to guarantee complete removal of information once it has been posted.

Unlike traditional bullying victims, cyberbullying victims do not always know their perpetrator(s). Kowalski and Limber (2013) reported that nearly 50% of their sample were unaware of their perpetrators' identity. The anonymity of the online environment makes it an appealing platform to bully others (Patchin & Hinduja, 2015) as perpetrators often associate anonymity with a decreased risk of getting caught (Erdur-Baker, 2010). Online perpetrators do not have to directly interact with and see their victims' responses. This can lead to the perpetrator using more hurtful or insulting language than they would in a face-to-face interaction (Patchin & Hinduja, 2015; Willard, 2007).

In summary, in order for a behavior to be considered bullying or cyberbullying, it must be intentional, occur repeatedly and over and extended period of time, and have a power differential. In addition, although traditional face-to-face bullying and cyberbullying have notable similarities, they also have a variety of important and noteworthy differences. Cyberbullying behaviors can occur more frequently, be more intense, and can leave victims feeling powerless and unable to control or stop the bullying (Hinduja & Patchin, 2010a, 2015). These are important aspects to consider when studying the influence cyberbullying victimization on a victim, as they can influence how a victim experiences and copes with victimization and can be important distinctions to consider when developing and implementing prevention methods for bullying and cyberbullying victimization.

Cyberbullying among Postsecondary Students

Estimates of cyberbullying victimization among postsecondary students range from around 10% (Finn, 2004; Kraft & Wang, 2010; Schenk & Fremouw, 2012) to 28% (Francisco, et al., 2015). This wide range of estimates is not surprising given the continued debate over how to define and measure cyberbullying, varying ages of respondents, different methods and types of cyberbullying behaviors studied, and the length of time used to measure victimization and perpetration (Cook, Williams, Guerra, Kim, & Sadek, 2010). For example, Schenk and Fremouw (2012) reported a prevalence rate of 8.6% among their sample when cyberbullying victimization was defined by those respondents that answered "yes" to being cyberbullied and indicated being cyberbullied four or more times since attending a postsecondary institution. However, Walker, et al. (2011) found that among their sample of undergraduate students nearly 30% reported experiencing behaviors considered cyberbullying (when the word cyberbullying was removed from the question), although only 11% self-identified as being cyberbullied (answered "yes" to

being a cyber-victim). This suggests that postsecondary students may not accurately report their involvement in cyberbullying (Francisco, et al., 2015). Asking one yes/no question may not suffice, possibly because students do not associate their experiences with actually being a cyberbullying victim—they may downplay what they experience and not consider it intense enough to recognize themselves a victim. Although a little over half the sample (57%) indicated they had been victimized fewer than 4 times, 14% had been cyberbullied more than 10 times. MacDonald and Roberts-Pittman (2010) found that 22% of students surveyed (n = 439) reported being cyberbullied since attending a postsecondary institution while nearly 9% of students admitted to cyberbullying someone else. Cyberbullying was defined as "sending or posting harmful or cruel text or images using the Internet or other digital communication" (p. 2004). However, due to the varied definitions of cyberbullying used within these studies, accurate comparisons are difficult.

A variety of factors have been found to influence cyberbullying victimization among postsecondary students, such as age and gender differences. There may be a connection between those who are bullied during their younger years and those bullied or cyberbullied in college (Chapell, 2006; Sourander et al., 2010). Bauman and Newman (2013) found that almost 4% of their college sample experienced bully victimization since attending college. A majority of these respondents (81%) disclosed that they were victims of bullying while in high school. Therefore, prior victimization is a predictor of continued or increased harassment in postsecondary institutions (Bauman & Newman, 2013; Beran & Li, 2008; Juvonen & Gross, 2008; Hinduja & Patchin, 2008; MacDonald & Roberts-Pittman, 2010; Marcum, Higgins, Freiburger & Ricketts, 2014; Smith et al., 2008; Ybarra & Mitchell, 2004). Furthermore, younger postsecondary students tend to engage in cyberbullying more than older students, especially those under the age

of 25 years (Kraft & Wang, 2010; Zalaquett & Chatter, 2014). This may be due in part to simple maturation and the fact that as emerging adults, students 18-25 years old are still transitioning and trying to figure out their role as a student and where they fit within the college environment and who they want to be after graduation.

The prevalence of cyberbullying across gender is not straightforward. MacDonald and Roberts-Pittman (2010) found that male students were slightly more likely to admit to cyberbullying others (11.4%) than females (7.6%), and males were also more likely to report having been cyberbullied (21.9%) than female (22%) undergraduate students. However, males were slightly less likely (37.4%) to know someone who had been cyberbullied than females (38.5%). Faucher et al. (2014) found that male students had somewhat higher rates of cyberbullying victimization and perpetration than female students and were more likely to be victimized by someone they did not know. Female students had a higher propensity to be victimized by someone they believed was a friend or an acquaintance and admitted to targeting friends when they perpetrated cyberbullying. Females were also more likely to indicate their gender was a reason they were being bullied while males most often cited their ethnicity. Furthermore, in terms of the platform by which cyberbullying takes place some research suggests that males are more likely than females to be victims of cyberbullying through online gaming platforms (Faucher, et al., 2014; Kowalski et al., 2012). However, Zalaquett and Chatter (2014) found that females were five times more likely to report being cyberbullied compared to males. Other studies (e.g., Finn, 2004) reported no significant gender differences between male and female students likelihood of experiencing online harassment. Gender's influence on rate of victimization remains inconclusive. Given the small number of studies exploring the relationship

between gender and cyberbullying and the various definitions used, it is difficult to compare and accurately understand how gender influenced cyberbullying victimization.

Other important individual level identity factors, such as sexual orientation and race and ethnicity, have been found to also influence cyberbullying victimization. For example, most studies looking at sexual orientation and cyberbullying have found that identifying oneself as gay, lesbian, bisexual, or transgender (LBGT) increases the likelihood of being a victim of cyberbullying (Baldasare, Bauman, Goldman & Robie, 2012; Finn, 2004; MacDonald & Roberts-Pittman, 2010). Finn (2004) specifically found that identifying as LBGT doubled one's chance of receiving harassing e-mails, from both strangers and acquaintances. Additionally, although not yet well researched, one's race and ethnicity can influence rates of cyber-victimization. Zalaquett and Chatter (2014) found that Asian Americans (32%) were at least 4 times more likely to experience cyber-victimization than African American (18%), Hispanic (18%), or European American (15%) postsecondary students. MacDonald and Roberts-Pittman (2010), however, found no significant racial or ethnic differences in rates of cyberbullying victimization. Most other studies exploring cyberbullying victimization either did not examine or failed to report on race or ethnic differences (e.g., Aricak, 2009; Faucher et al., 2014; Francisco et al., 2015; Gibb & Devereux, 2014; Kowalski et al., 2012; Marcum et al., 2014; Rafferty & Vander Ven, 2014; Schenk et al., 2013; Snell & Englander, 2010; Walker et al., 2011).

In summary, cyberbullying is a type of bullying that takes place online. Although bullying and cyberbullying are similar in terms of intention, repetition, and the existence of a power differential, the online environment allows for unique differences. Specifically, cyberbullying lacks time and space restrictions, perpetrators are often unknown, and anonymity can create an environment where the perpetrator feels insuperable while the victim feels

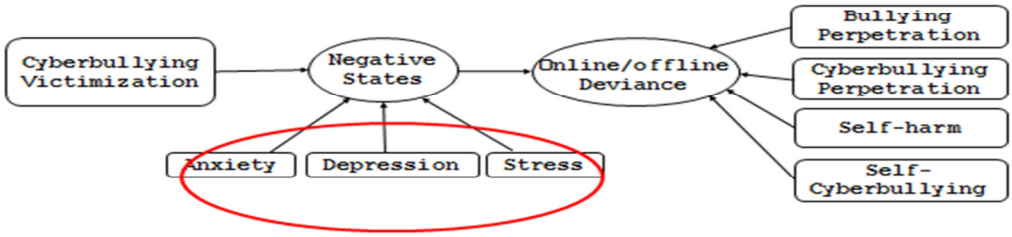
vulnerable and powerless. Understanding these differences is important given the consequences of victimization. Although researchers have been exploring cyberbullying behaviors among youth, few have focused on postsecondary aged students despite research suggesting that students who are victims of traditional bullying tend to also experience cyberbullying victimization and many high school students who experience traditional bullying are more likely to experience cyberbullying later in life (Beran & Li, 2008; Cook et al., 2010; Hinduja & Patchin, 2008; Juvonen & Gross, 2008; MacDonald & Roberts-Pittman, 2010; Smith et al., 2008; Ybarra & Mitchell, 2004). Therefore, this dissertation aimed to fill in this literary gap by using general strain theory to examine cyberbullying victimization among postsecondary students, and, in addition, adds depth to this topic for this age group by investigating the relationship between negative emotional responses to cyber-victimization and the use of negative delinquent behaviors to cope.

The remainder of this review will focus on the various components in the proposed model (see Fig. 1.1) based on general strain theory, which posits that when people feel mistreated they become upset and experience heightened negative emotions, such as frustration, and respond to blocked desires by engaging in delinquent behaviors (online/offline deviance). In this study, negative emotional states were conceptualized as reactions to the experience of being victimized, which result in feelings of stress, depression, and anxiety. These negative emotional reactions may influence an individual's use of either internal or external online or offline deviance as a way to cope with being victimized (see Fig. 2.1). Internal behaviors included in this study were self-harm and self-cyberbullying while external behaviors included online and offline bullying perpetration. Therefore, the negative emotional states associated with cyberbullying

victimization will be explored followed by the different types of deviant behaviors used to cope with victimization.

Figure 2.1

Negative Emotional States of Victimization



Negative Emotional States Associated with Victimization

Research has shown correlations between negative emotional states and cyberbullying victimization. Schenk and Fremouw (2012) utilized the SCL-90-R and SBQ-90-R to explore the negative psychological consequences associated with cyberbullying victimization among postsecondary students (n =138). The SCL-90-R assesses a variety of psychopathological symptoms and includes measures for anxiety and depression. Results showed that that both male and female victims reported higher levels of depression, anxiety, phobic anxiety, and paranoia than a matched control group of non-victims. Rivituso (2014) conducted a qualitative study and found that most victims reported feeling depressed as a result of being victimized; living in the near vicinity of their perpetrators contributed to the depression. Faucher et al. (2014) studied the impact of cyberbullying with a sample of Canadian university students in order to determine

gender based similarities and differences. Participants were given a list of 11 yes/no questions to determine the effect bully victimization had on their emotional, physical, social and educational outcomes. Females reported higher rates of distress than males. Of the students who reported being victimized at college during the last 12 months, 39% reported it affected their emotional security or physical safety. Additionally, almost twice as many female students reported high levels of distress compared to their male counterpart. This may have contributed to the percentage of students who reported missing class (17%) and felt like dropping out of the university (17%). Forty-seven percent of female students reported experiencing mental health issues (emotional outbursts, anxiety, depression, etc.) whereas only 25% of the males reported the same emotions. There were no noted differences related to suicidal thoughts or self-injury.

As posited by general strain theory, victims of strain, in this case cyberbullying victimization, often report experiencing higher levels of negative emotional states. Therefore, the current literature seems to support the application of general strain theory to research exploring cyber-victimization. We would expect that a victim's emotional response to victimization could influence the utilization of a negative coping response. For strain to lead to delinquent or aggressive behaviors it must: (1) occur for an extended period of time, (2) be high in magnitude, (3) be perceived as unjust, and (4) create enough pressure to endorse delinquent behaviors (Agnew 1992). The consequences associated with cyberbullying victimization vary based on the frequency of victimization, the length of time one has been victimized, and the level of maliciousness associated with the bullying acts (Tokunaga, 2010).

By its definition, cyberbullying qualifies as a major type of strain that leads to delinquent acts as it requires intentionality, repetition over an extended period of time, and a power imbalance. This power differential may increase the victim's sense of unjustness because they

are not able to control what information is shared publically about them or stop their perpetrator from harassing them (Francisco et al., 2015; Willard, 2007). Individuals who engage in self-harm report experience strong, negative emotional states prior to engaging in harming behaviors such as self-hatred, anger, or intense sadness (Nock & Mendes, 2008). As, general strain theory suggests, negative emotions mediate delinquent behavior. Therefore, the present study used general strain theory to examine the relationship between cyber-victimization and internalized and externalized delinquent behaviors (Hay & Meldrum, 2010) (Fig. 2.1). This study specifically focused on the negative emotional states of anxiety, depression, and stress.

To this end, the following hypotheses were predicted:

H1a: *Students who report experiencing cyber-victimization will report experiencing higher levels of anxiety than non-victimized students.*

H1b: *Students who report experiencing cyber-victimization will report experiencing higher levels of depression than non-victimized students.*

H1c: *Students who report experiencing cyber-victimization will report experiencing higher levels of stress than non-victimized students.*

H2a: *The negative emotional state of anxiety will mediate the relationship between cyber-victimization and external delinquent behavior.*

H2b: *The negative emotional state of anxiety will mediate the relationship between cyber-victimization and internal delinquent behavior.*

H2c: *The negative emotional state of depression will mediate the relationship between cyber-victimization and external delinquent behavior.*

H2d: *The negative emotional state of depression will mediate the relationship between cyber-victimization and internal delinquent behavior.*

H2e: *The negative emotional state of stress, will mediate the relationship between cyber-victimization and external delinquent behavior.*

H2f: *The negative emotional state of stress will mediate the relationship between cyber-victimization and internal delinquent behavior.*

These hypotheses seek to address two research questions: "Do students who experience cyber-victimization during postsecondary experience higher levels of negative emotional states (anxiety, depression, and stress) compared to non-victims?" and "Do negative emotional states influence the relationship between cyber-victimization and delinquent behavior?"

To summarize, current literature examining victimization among postsecondary students and negative emotional responses supports this study's assertion that negative emotions are associated with victimization and that these emotions may lead to delinquent coping behaviors, as posited by general strain theory. This study focused on only three negative emotions: anxiety, depression, and stress as these negative emotional often co-occur and are associated with cyberbullying victimization. Next, internal and external delinquent coping behaviors will be explored further.

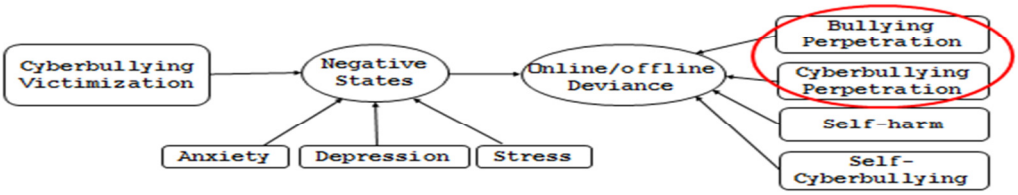
External Delinquency

General strain theory posits that when an individual experiences something negative, strain results. This study examined whether the strain from being a victim of cyberbullying has the potential to increase a victims' likelihood of engaging in externalized delinquent behavior. As posited by general strain theory, perpetrating against another student in response to being victimized may reduce strain and help the victim gain a sense of power and control. Therefore, this study explored whether postsecondary cyberbullying victims reported higher levels of

external delinquent behaviors compared to non-victims (see Fig. 2.2). External delinquent behaviors for the current study included traditional face-to-face bullying and cyberbullying. The next section of this paper will therefore examine traditional face-to-face bullying and cyberbullying in greater depth.

Figure 2.2

External Delinquent Behaviors



Bullying and Cyberbullying Perpetration

A substantial amount of literature supports the assertion that victimization can lead to later perpetration (Gibb & Devereux, 2014; Hay et al., 2010; Hinduja & Patchin, 2007; Katzer, Fetchenhauer & Belschak, 2009; Marcum et al., 2014; Schenk et al., 2013; Smokowski, Evans & Cotter, 2014; Walrave & Heirman, 2011; Ybarra & Mitchell, 2004). However, most of the research focuses on adolescents. Hinduja and Patchin (2010b) used general strain theory to explore the potential causes of traditional and cyberbullying perpetration. They found (n = 1,963) that both traditional and cyberbullying victimization were associated with victims experiencing more negative emotions than their non-victimized peers. Being a victim of either type of bullying

was associated with an increased risk of future bully perpetration. The strain of being bullied and the negative emotions associated with being victimized increased the likelihood that the prior victimized youth would become a bully. Similar results were reported by Walrave and Heirman (2011) who found that victims of cyberbullying were *nine times* more likely to cyberbully others as a way to seek revenge.

Research exploring bullying and cyberbullying perpetration in response to victimization among postsecondary students is limited. Few studies have focused specifically on exploring the overlap of cyberbullying victimization and perpetration. Using an online survey, Marcum, Higgins, Freibuger and Ricketts (2014) found that among their sample of 1,139 postsecondary students, both male and females were more likely to later cyberbully others on Facebook if they had been previously cyberbullied. The authors asserted that this supports the assumption that cyber-victimization has the potential to lead to cyberbullying perpetration because it allows victims to retaliate and can help victim gain a sense of control. Schenk, Fremouw and Keelan (2013) investigated the characteristics associated with cyberbullying perpetration among postsecondary students. They found that almost 58% of females and 42% of male reported being both a victim and perpetrator of cyberbullying (n = 799). Students who experience both victimization and perpetration reported higher suicidality, higher levels of aggression, and engaged in more violent crimes compared to a control group who reported having never experienced cyberbullying perpetration or victimization. Finally, Gibb and Devereux (2014) found that among their sample of postsecondary students (n = 297) victims of cyberbullying were eleven times more likely to report engaging in cyberbullying perpetration than non-victims. Although limited, this research supports the assertion that bullying victimization is a strain that can increase a victim's risks of engaging in delinquent behaviors.

These studies provide support for using general strain theory to understand the consequences of cyberbullying victimization, specifically external behaviors. Victims identified bullying victimization as a source of strain and experienced a variety of negative emotions. This strain may have caused them to feel pressure and to respond in some way. Some individuals chose to respond to strain by engaging in externalized delinquent behaviors. Perhaps, as suggested by general strain theory but not specifically addressed in the above articles, the young adults felt that the retaliatory behavior was an appropriate and justified response because they were unfairly victimized. Youth who bully others do so to gain a sense of power and superiority (Espelage & Swearer, 2011) which in this case—when a victim becomes the bully—could be a way to correct the power imbalance caused by the strain of being victimized. Youth victimization increases the chances of youth engaging in aggressive behaviors even when they have no history of prior delinquent behaviors (Apel & Burrow, 2011). Therefore, this study aimed to advance the field of cyberbullying research by applying theory and testing its applicability to the phenomenon of cyberbullying. To this end, it was hypothesized that:

> ***H3a:*** *Students who identify as being victims of cyberbullying since attending postsecondary will report engaging in traditional perpetration more often than non-victims.*
>
> ***H3b:*** *Students who identify as being victims of cyberbullying since attending postsecondary will report engaging in cyberbullying perpetration more often than non-victims.*

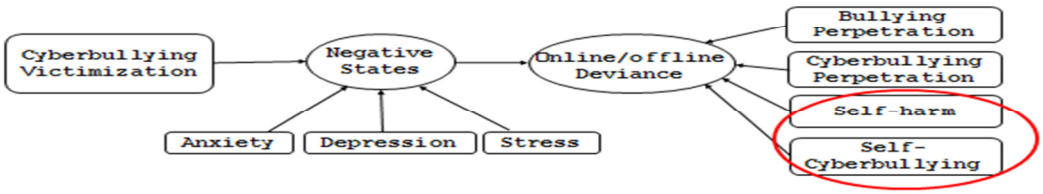
Internal Delinquency

Although externalized delinquent behavior can result from bullying victimization, some victims may respond by internalizing the abuse (Espelage & Swearer, 2011). This study posited

that the strain experienced from being a victim of cyberbullying has the potential to increase a victims' likelihood of engaging in internalized delinquent behaviors. Specifically, this study focused on self-harming behaviors and self-cyberbullying (see Fig. 2.4). These negative internal behaviors may help reduce the level of strain the victim feels and provide them a sense of control or a way to express their pain. Therefore, this study explored whether postsecondary cyberbullying victims reported higher levels of internal delinquent behaviors than non-victims. The next section of this paper will therefore examine self-harming behaviors and self-cyberbullying in greater depth.

Figure 2.3

Internal Delinquent Behaviors



Self-harm and Self-cyberbullying

Self-harm, also known as non-suicidal self-injury (NSSI) is defined as direct, repetitive, intentional injury to one's own body without suicidal intent which causes minor to moderate bodily harm (Lloyd-Richardson, Perrine, Dierker, & Kelley, 2007). Self-harming behaviors are often confused with suicidal behavior. However, as the definition states, these behaviors are not motivated by suicidal thought and often signify a desire to live (Wilkinson & Goodyer, 2011).

However, those who report engaging in self-harming behaviors also report higher levels of suicidal behaviors and attempts (Whitlock, Eckenrode, & Silverman, 2006).

Self-harm behaviors include: cutting, scratching, hitting, burning, carving and branding, erasing skin, pulling out hair, picking at skin, biting, abusing pills, self-poisoning, bone-breaking, and disordered eating patterns (Laye-Gindhu & Schonert-Reichl, 2005; Klonsky & Glenn, 2009; Pryjmachuk & Trainor, 2010). The most common types of self-harm behaviors reported by adolescents and young adults include scratching, cutting, burning, carving, punching or hitting oneself, biting, and picking at skin or wounds (Briere & Gil, 1998; Heath, Toste, Nedecheva & Charlebois, 2008; Klonsky, 2007; Laye-Gindu & Schonert-Reichl, 2005; Nock, 2010; Whitlock et al., 2011).

Those who engage in self-harm, tend to begin engaging in these behaviors between the ages of 12 to 14 years (Nock, 2010). Although self-harming behaviors tend to begin during adolescence, nearly 40% of individuals report self-harming for the first time between the ages of 17 and 24 (Heath et al., 2008). Students with a history of self-harming behaviors are also more likely to report current engagement in self-harming behaviors during their first year of college (Hamza & Willoughby, 2014). Finally, in clinical settings, self-harming behaviors are reported more often among women compared to males (Nock, 2010) whereas women and men in community samples report similar rates of self-harm (Heath et al., 2008; Klonsky, 2011; Whitlock et al., 2006).

Self-harm is often used as a maladaptive coping mechanism to induce various feelings including relaxation, gratification, numbness, physical pain, or pleasure (Nock, 2010). Many individuals who self-harm also report symptoms of depression, anxiety, suicidal behaviors and report lower levels of self-esteem (Cawood & Huprich, 2011; Gollust, Eisenberg & Golberstein,

2008; Hamza & Willoughby, 2014; Nock, 2010; Wilcox et al., 2012). Additionally, many individuals who self-harm come from adverse family environments where they feel alienated and unsupported by their parents and struggle with peer relationships (Martin, Bureau, Cloutier & Lafontaine, 2011; Sim et al., 2009). Coming from an unsupportive home environment can lead to emotional deficits and a lack of emotional regulation, common characteristics associated with self-harming behaviors. Additionally, compared to postsecondary students who do not engage in self-harming behaviors, students who self-harm also report lower levels of peer support (Heath et al., 2008). Young adults who lack positive peer relationships or are victimized by their peers are more likely to engage in self-harming behaviors than those who have strong peer relationships (Jutengren, Kerr, & Stattin, 2011). This can often lead to feelings of isolation and loneliness and lead to destructive and maladaptive behaviors (Glassman, Weierich, Hooley, Deliberto, & Nock, 2007; Nock & Mendes, 2008).

Self-harm, Bullying Victimization and General Strain Theory

Hay, Meldrum and Mann (2010) examined the effects of bullying on both externalized and internalized aggressive behaviors using self-report survey data from 426 adolescents. Using general strain theory as their theoretical frame, they hypothesized that youth who had experienced traditional and/or cyberbullying victimization would be more likely to engage in both external and internalized forms of deviance. Results showed that traditional bullying and cyberbullying were strongly associated with *both* externalized (hurting others or their property) and internalized (suicidal thoughts and self-harming behaviors) aggressive behaviors. Traditional and cyberbullying had a greater effect on *internalized* aggressive behaviors than externalized aggressive behavior. Specifically, victims of cyberbullying were 24% more likely to engage in internalized than externalized delinquency. These results support the utilization and assertions of

general strain theory in bullying and cyberbullying research. However, the researchers went one step further to examine the sex differences of internalized and externalized delinquency.

Results indicated that externalized aggressive behaviors occurred at similar rates for both male and female victims of both traditional and cyberbullying and both males and females victims were at a heightened risk for internalized aggressive behaviors. However, male victims of cyberbullying were *more likely* than female victims to engage in internalized aggressive behaviors, a result that was contrary to the author's predictions and prior research (Broidy & Agnew, 1997). Specifically, male victims of cyberbullying were almost two times more likely to suffer from suicidal ideations and engage in self-harming behaviors than they were to engage in externalized aggressive behaviors. The authors assert this pattern of behaviors may result from the rejection and social isolation that often occurs among bully victims, which may lead to internalization of emotional and behavioral responses rather than externalization. More research is needed to better understand cyber-victimization and internalized delinquency. This is especially true with postsecondary students as no studies, to this author's knowledge, have examined the relationship between victimization and internal or external delinquent behaviors specifically using general strain theory. However, research does show a relationship between victimization and suicidal ideation.

Geel et al. (2014) analyzed a total of 34 different studies to explore the relationship between bullying victimization and suicidal ideation among 9 to 21 year-olds (n = 284,375). Male and female students who were victims of bullying or cyberbullying were more likely than other students to suffer from suicidal ideations and non-fatal suicidal attempts. Cyber-victimization was more strongly associated with suicidal ideation than traditional face-to-face bullying. Sex or age did not moderate this relationship. The authors posit this difference may be

partially explained by the fact that material on the Internet can reach a wide audience within a short period of time and because information or photos posted online can never completely be erased increasing the likelihood of future victimization. Correspondingly, Schenk and Fremouw (2012) found that students who reported frequent victimization engaged in more suicidal behaviors compared to their non-victimized peers.

Another form of cyberbullying that can compromise the well-being of postsecondary students that has been understudied includes "digital self-harm" or "self-cyberbullying." Self-cyberbullying occurs when someone anonymously and publicly posts hurtful, mean or harassing messages about oneself online (Englander, 2012). It has been estimated that nearly 10% of undergraduates admitted to self-cyberbullying during high school (Englander, 2012; Patchin, 2013), yet this phenomenon remains unexplored within youth and postsecondary samples. Self-cyberbullying is assumed to function similarly to self-harming behaviors but within the online environment (Englander, 2012). However, with only one research study exploring this behavior, it is hard to understand the etiology, function, and occurrence of this behavior.

In summary, research with adolescent and postsecondary samples have found that victimization does increase the likelihood of one engaging in self-harming behaviors and suicidal thoughts and ideations (Englander, 2012; Hay et al, 2010; Glee et al., 2014). Although some work has used general strain theory to guide their understanding of these behaviors, others have used no guiding framework. Therefore, this study sought to better understand both internal and externalized aggressive behaviors as they relate to the emotional response of cyberbullying victims. Additionally, this study also explored self-cyberbullying. Given that cyberbullying has been linked to negative emotional states and internalized and externalized delinquent behavior, it was posited that:

H3c: *Students who identify as being victims of cyberbullying since attending postsecondary will report engaging in more self-harming behaviors than non-victims.*

H3d: *Students who identify as being victims of cyberbullying since attending postsecondary will report engaging in more self-cyberbullying than non-victims.*

Research indicates that cyberbullying victimization is experience by 10% to 28% of postsecondary students. The consequences associated with cyberbullying victimization vary based on the frequency of victimization, the length of time one has been victimized, and the level of maliciousness associated with the bullying acts (Tokunaga, 2010), although cyberbullying is often perceived as more detrimental than traditional bullying due to the anonymity and lack of reprieve from cyberbullying. As posited by general strain theory, the strain of being victimized can lead to a range of negative emotions. This study specifically focuses on the emotional states of anxiety, depression, and stress. Additionally, general strain theory states that these negative emotions can increase an individual's likelihood of engaging in external and internal delinquent behaviors. The present study focused on the externalized defiant behaviors of online and offline perpetration and the internalized delinquent behaviors of self-harm and self-cyberbullying.

CHAPTER 3: Research Method

Participants

An a priori power analysis was conducted using G*Power 3.1. An effect size of .15, α = .05 and a 95% confidence interval with 10 predictors was used to determine that a minimum sample of 170 participants was need to evaluate the research questions. Undergraduate students attending a state institution were recruited for study participation. For the purpose of the current study, inclusion criteria required that participants were (1) currently enrolled as undergraduate students at a large state institution, (2) able to read and write in English, and (3) were between the ages of 18-25. This age span has been used in prior research exploring postsecondary students as it captures the "traditional" undergraduate population and has commonly been the sample used within prior research in this field. In addition, the age span of 18-25 years represents the period of emerging adults which was the age of interest for this study.

Procedures

Self-reported measures are the most commonly used method for ascertaining information about participant's subjective experiences (Graham, Bellmore, & Juvonen, 2003). In line with prior research looking at cyberbullying among postsecondary students, the present study used an online survey to collect data regarding postsecondary student's experiences with cyberbullying. The online self-report survey (Appendix A) was administered through the University's Qualtrics Survey Software. University procedure prohibits sending mass e-mails to the whole undergraduate population. Therefore, participants were recruited via e-mail through the institution's Office of the Registrar for a $20 fee per e-mail batch sent. An initial batch of invitation e-mails was sent to 2,000 randomly selected students who met the inclusion criteria. These were followed by two reminder e-mails. The invitation and reminder letters described the

study in general terms to reduce self-selection bias, however this study utilized incentives to encourage participation. An online hyperlink was included in the invitation and reminder e-mails which allowed the participant direct access to the survey. The link was anonymous and did not to track participants' personal information. The initial invitation e-mail was sent the morning of Thursday January 7th, 2016 with reminder e-mails being sent the following two Thursdays (January 14th and January 21st). In order to meet sample size requirements, a second batch of e-mails was sent to another 2,000 randomly selected participants (excluding those asked to participate in the first round). The e-mails again were sent on a Thursday morning starting February 4th, 2016 with reminder follow-up e-mails being sent February 11th and February 18th, 2016.

Prior to starting the survey, students read the informed consent, which explained the purpose of the study in general terms and possible risks associated with participation. After reading the informed consent, participants were asked to select "I agree" or "I disagree" to take part in the study. Students were required to agree in order to continue and participate in the survey. Participants were informed that they could decline to answer any question or opt out of the survey at any time without repercussions. Due to the sensitive nature of the topic, students were provided with a list of campus resources upon completion of the survey. Participants were also given the option to provide their e-mail address if they wanted to be entered into a drawing for a chance to win a $50 or $25 online gift card to Amazon.com. There were a total of twenty $50 gift cards and thirty $25 gift cards.

Measures

Demographic Questionnaire

There were a variety of demographic questions. Demographic questions included such things as: student's birth year (1 = 1990, 2 = 1991, 3 = 1992, 4 = 1993, 5 = 1994, 6 = 1995, 7 =1996, 8 = 1997); gender (Female = 1, Male = 2, Transgender Female = 3, Transgender Male = 4, Other = 5); ethnicity (American Indian or Alaskan Native = 1, Asian = 2, Native Hawaiian or Pacific Islander = 3, Black or African American = 4, Hispanic or Latino(a) = 5, White/Caucasian = 6, Other = 7); international status (No = 0, Yes = 1); sexual orientation (Heterosexual = 1, Gay = 2, Lesbian = 3 Asexual = 4, Bisexual = 5, Queer = 6, Other = 7); class status (Freshman = 1, Sophomore = 2, Junior = 3, Senior = 4, Other = 5); GPA (0.0-1.0 = 1, 1.5-2.0 = 2, 2.5-3.0 = 3, 3.5-4.0 = 4); Sorority/Fraternity status (No = 0, Yes = 1); daily computer use (0-9 minutes = 1, 10-20 minutes = 2, 21-30 minutes = 3, 31-40 minutes= 4, 41-59 minutes = 5, 1-3 hours = 6, 4-6 hours = 7, 7-9 hours = 8, 10-12 hours = 9, and over 12 hours = 10); and computer proficiency (Novice = 1, Intermediate = 2, Advanced = 3, Very Skilled = 4).

Traditional Bullying Perpetration and Victimization

Traditional (non-cyber) bullying and perpetration were assessed using the Bully Perpetration and Victimization Scales (BPVS). The BPVS is comprised of a victimization and perpetration scale and was developed by this researcher and adapted from a variety of validated questionnaires assessing bullying during primary and secondary school and in the workplace (Doane, Kelley, Chiang, & Padilla, 2013; Espelage & Holt, 2001; Mynard & Joseph, 2000; Orpinas & Frankowski, 2001; Solberg & Olweus, 2003; Swearer & Cary, 2003; Warden, Christie, Cheyne, Fitzpatrick, & Reid, 2000; Wolke, Woods, Bloomfield, & Karstadt, 2000). A definition of bullying was given, and defined as an unwanted, aggressive behaviors that involve a

real or perceived power imbalance and is repeated over time, and can include teasing, name calling, inappropriate sexual comments, threats, being left out of activities or ignored on purpose, spreading rumors about someone, or hitting, kicking, or tripping someone on purpose. Participants were then asked, "Given the above definition, since attending postsecondary, have you been involved in any of the following activities?" and probed to check those that they had experienced as a victim (e.g., been teased or taunted by another student; been called a mean, inappropriate, or offensive name by another student; had another student make sexually inappropriate comments to you; had another student threaten to cause you harm; been left out of some activity by your peer group on purpose or ignored on purpose; had another student spread rumors/lies about you) or perpetrator (e.g., embarrassed, humiliated or ridiculed another student in public on purpose; slapped, hit or kicked another student; broke another students things; made mean or rude hand gestures at another student; pushed or shoved another student; said something insulting or about another student's attitude or private life; said something about another student to make peers laugh; threatened or blackmailed another student; actually physically hurt another student) since attending college. For analysis these questions were combined into a dichotomous variable; those with bullying perpetration experience versus those with no bullying perpetration experience and those who have been a victim and those who have no bullying victimization experience. For final analysis these variables were re-coded so that 1 represented those who had experienced bullying perpetration and victimization and 0 represented those with no experience.

Additionally, there were two general questions at the end of each sub-scale that asked "When you engaged in negative behaviors with other students, where did this/these event(s) occur?" or "When you experienced being bullied, where did this/these event(s) occur?" and "Why did you choose to say or do those thing to another students" or "Why do you think you

were targeted?" with a list for participants to check options that applied to them such as "Because of my looks (physical appearance/clothes/piercings or tattoos), because of my weight, and because I have a disability." Due to the low number of participants reporting experiencing bullying victimization and perpetration, Cronbach's Alpha could not be calculated for this scale.

Cyberbullying Victimization and Perpetration

An adapted version of the Cyberbullying Experiences Survey (CES) was administered to determine cyberbullying perpetration and victimization since attending college (Doane, Kelley, Chiang, & Padilla, 2013). The CES scale includes 21 victimization items and 20 perpetration items. The CES was specifically developed to examine cyberbullying victimization and perpetration among postsecondary students. The CES has test-retest reliability and convergent validity with other instruments that assess Internet harassment and cyberbullying and is internally consistent (Doane et al., 2013). The victimization scale had an alpha above 0.70, and very good (0.64) to excellent (0.92) factor loadings within their model (Doane et al., 2013). Additionally, the perpetration scale had excellent factor loading ranging from 0.76 to 0.96 and alphas above 0.70 (Doane et al., 2013). Cronbach's alpha for both the victimization and perpetration scale within this study was 0.95 and 0.94.

Participants were asked to indicate what they have experienced within the current school year (September 2015 – January 2016) (Doane, et al., 2013). Questions regarding specific behaviors were rated on a six point scale including: never = 0, less than a few times a year = 1, a few times a year = 2, once or twice a month = 3, once or twice a week = 4, and everyday/almost every day = 5 for both the victimization scale (e.g., has someone pretended to be someone else while talking to you electronically; has someone logged into your electronic account and changed your information; has someone written mean messages about you publicly

electronically) and the perpetration scale (e.g., have you sent a rude message to someone electronically; have you sent an unwanted sexual message to someone electronically; have you sent a rude message to someone electronically). For final analysis, scores on these scales were recoded as follows: 1 (meeting the threshold of *at least a few times a year*) and 0 (never cyber-bullied).

For the current study and proposed research questions, answers to the cyberbullying victimization and perpetration questions were transformed into dichotomous variables—those with cyberbullying or perpetration experience and those without. Since this study aims to first understand if cyberbullying perpetration and victimization are occurring within the postsecondary setting, the use of the dichotomous variables was most appropriate.

Negative Psychological States

Depression, anxiety, and stress were assessed using the Depression, Anxiety, and Stress Scales-21 (DASS-21), a measure developed by Lovibond and Lovibond (1995). The DASS-21 consists of three seven-item subscales for depression (e.g., I couldn't seem to experience any positive feelings at all; I found it difficult to work up the initiative to do things; I felt that I had nothing to look forward to; I felt down-hearted and blue; I felt I wasn't worth much as a person; I felt that life was meaningless), anxiety (e.g., I experienced dryness of the mouth; I experienced breathing difficulty; I was worried about situations in which I might panic and make a fool of myself; I felt I was close to panic; I found myself getting agitated; I was aware of the action in my heart in the absence of physical exertion; I felt scared without any good reason), and stress (e.g., I found it hard to wind down; I tended to over-react to situations; I felt I was using a lot of nervous energy; I found myself getting agitated; I found it difficult to relax; I was intolerant of anything that kept me from getting on with what I was doing; I felt rather touchy). Participants

were asked to indicate on a 4 point Likert-type scale (1 = did not apply to me at all; 2 = applied to me to some degree, or some of the time; 3 = applied to me a considerable degree, or a good part of the time; and 4 = applied to me very much, or most of the time) how applicable each statement was to them over the past week. Scores for each of the three scales were summed together, as specified by the DASS-21 scoring sheet. Scores for each scale can range from 21-84, with higher scores indicating greater levels of anxiety, depression, and/or stress. The DASS-21 has been found to have good construct validity (Henry & Crawford, 2005; Na, Dancy & Park, 2015) with Cronbach's alphas ranging from 0.88-0.90 for the depression scale, 0.82-0.80 for the anxiety scale, and 0.90 for the stress scale. For the overall scale, Henry and Crawford (2005) reported a Cronbach's alpha of 0.93. Evidence indicates that the DASS-21 also has convergent and discriminate validity with two independent and validated measures of depression and anxiety (Henry & Crawford, 2005). For the current study, Cronbach's alpha for the overall scale was 0.94; Cronbach's alpha for the depression scale was 0.89, 0.85 for the anxiety scale, and 0.84 for the stress scale, respectively.

Self-harm

Self-harming behaviors were assessed using the Inventory of Statements about Self-injury (ISAS) (Klonsky & Olino, 2008). This 39-item questionnaire specifically assesses engagement in direct self-harming behaviors, as well as the frequency and function of the behavior. This measure was designed and tested with college student samples and has been used in a variety of studies (Glenn & Kloinsky, 2011; Hamza & Willoughby, 2014; Kloinsky & Glenn, 2009; Kloinsky & Olino, 2008; Saraff & Pepper, 2014). For the current study, Cronbach's alpha was .90. The ISAS has been shown to have good internal consistency and construct validity (Kloinsky & Glenn, 2009; Kloinsky & Olino, 2008). The ISAS has also been shown to have

good stability over one year with test-retest correlations ranging from 0.52-0.83 (Glenn & Kloinsky, 2011). A dichotomous (yes/no) question was added to this research, asking participants to indicate if they have engaged in self-harming behaviors, which was used for final analysis. Therefore, students with experience of self-harm were coded as 1 and those without experience will be coded as a 0.

Self-cyberbullying

Questions regarding self-cyberbullying were adapted from the ISAS and added as a third section (Klonsky & Olino, 2008). Participants are asked to indicate via a yes/no question if they had ever posted online or used other technology to write mean, cruel, or aggressive posts either against or to themselves. Additionally, participants are asked to identify the platform they used to self-cyberbullied and if the post or message was anonymous. Similar to the ISAS, participants estimated how many times they have engaged in this behavior ever. Cronbach's Alpha for the current study was 0.85.

Statistical Analysis

Descriptive statistics of demographic variables were conducted using IBM SPSS (e.g., mean, standard deviations (SD), and frequencies). To address the main research questions of this study regarding the mediation effects of negative emotional states (anxiety, depression, and stress) between cyberbullying victimizations and online/offline defiant behaviors, PROCESS, a macros for SPSS was utilized (Hayes, 2013). This program is a regression path analysis-based moderation and mediation model (Hayes, 2013). The PROCESS macro uses ordinary least squares (OLS) for continuous outcomes and Maximum likelihood logistic regression for dichotomous variables. Given that the outcomes examined for this study were dichotomous in nature, this program allowed for analysis of these variables while also making it possible to

explore the direct and indirect effects of negative emotional states on the negative consequences of cyberbullying victimization. Cyberbullying victimization, bullying and cyberbullying perpetration, self-harm, and self-cyberbullying were re-coded so that 1 represented those who had experienced bullying perpetration and victimization and 0 represented those with no victimization or perpetration experience. As mentioned previously, to address the current studies proposed research questions, dichotomous variables were used in the mediation analyses in order to compare non-victims (indicated as 0) to victims of cyberbullying and those who engage in harming behaviors (indicated as 1). This was determined to be the most appropriate method due to the nature of the data and the way in which the research questions were asked. In addition, gender, sexual orientation, ethnicity, class status and birth year were used as control demographic variables for the mediation analyses. Gender was recoded so that males were coded as 0 and females were coded as 1. Those who identified as transgender female, transgender male, or other were removed due to the low number of respondents in those categories. For sexual orientation, respondents who identified as LBGTQ were coded as 0 and respondents who identified as heterosexual were coded as 1. Ethnicity was recoded so that respondents who identified as American Indian/Alaskan Native, Asian, Native Hawaiian/ Pacific Islander, Black/African American, Hispanic/Latino(a), and other were coded as 0 and those who identified as Caucasian/White were coded as 1. Class status was not recoded and retained the following coding scheme: Freshman = 1, Sophomore = 2, Junior = 3, Senior = 4, Other = 5. Finally, birth year was not recoded and retained the following coding scheme: 1990 = 1, 1991 = 2, 1992 = 3, 1993 = 4, 1994 = 5, 1995 = 6, 1996 = 7, 1997 = 8.

This program also allowed for multiple mediators to be examined simultaneously so that all three negative emotional states – depression, anxiety, and stress – could be examined.

Additionally, this program generated biased-corrected bootstrapping for indirect effects. Bootstrapping is a nonparametric resampling method that makes no assumptions regarding the shape or direction of a distribution and, given the non-normality and level of skewness present in the current sample, it was used to overcome issues of power which result from non-normality and skewness in sample data (Bollen & Stine, 1990; Preacher & Hayes, 2004).

Results

Sample Demographics

A total of 4,000 students were invited to participant in the survey. Of those invited, 522 respondents started the survey. A total of 86 participants were removed from the sample for having incomplete surveys with more than 10% missing data. This resulted in a sample of 436 postsecondary students, resulting in about an 11% response rate. This response rate was calculated based on the number of surveys included in the analyses (436) divided by the 4,000 participants asked to complete the survey. This response rate is similar to other studies with this population (Walker, Sockman, & Koehn, 2011). It is important to note that students had to currently be enrolled at the university during the time of the survey to participate. Perhaps higher rates of victimization may have been experienced by students who had attended the university but were not currently enrolled or had left the university.

Descriptive statistics for the sample are presented in Table 3.1. The sample consisted of 65.6% (n = 286) female students and 33.3% (n = 145) male students between the ages of 18-24. Most participants identified as being single, never married (98.2%, n = 428). The sample predominately identified as heterosexual (91.5%, n = 399). The sample was comprised of 77.8% of students who identified as White/Caucasian (n = 339), 10.3% of students who identified as

Asian (n = 45), 5.5% of students who identified as African American or black (n = 24), and 1.6% of students who identified as Hispanic or Latino (n = 7).

Table 3.1

Descriptive Statistics

Gender	*%*	*n*
Male	33.3	145
Female	65.6	286
Ethnicity	*%*	*n*
White/Caucasian	77.8	339
Asian	10.3	45
Black/African American	5.5	24
Hispanic/Latino	1.6	7
Marital Status	*%*	*n*
Single, Never Married	98.2	428
Married	0.9	4
Divorced	0.2	1
Separated	0.2	1
Sexual Orientation	*%*	*n*
Heterosexual	91.5	399
Gay	0.9	4
Lesbian	0.5	2
Asexual	1.4	6
Bisexual	3.0	13
Queer	1.6	7
Class Status	*%*	*n*
Freshman	28.0	122
Sophomore	22.2	97
Junior	22.9	100
Senior	25.7	112
Other	0.9	4

Media Use and Computer Proficiency

Table 3.2 shows that 44.3% of participants spent 1-3 hours on their computer each day, while 34.2% spent between 4-6 hours on their computer each day, and 12.9% spent 7 or more hours on their computer each day. The majority of participants checked their social media and personal email several times a day (75%, *n* = 327). All participants (100%) indicated they owned a cell phone and 99.3% had smart phones. For computer proficiency skills, 33.9% of students rated their skills as intermediate and 51.4% rated their skills as advanced. Finally, participants were registered to a variety of social media community and sites but the most commonly used sites included Facebook (97.7%, *n* = 426), Snapchat (84.9%, *n* = 370), and Instagram (73.2%, *n* = 320).

Table 3.2

Technology and Social Media Use

Total number of hours on the computer each day	*%*	*n*
> 1 hour	8.8	38
1-3 hours	44.3	193
4-6	34.2	149
7 or more	12.9	56
Time on social media each day	*%*	*n*
30 minutes or less	18.7	81
31-40 minutes	11.5	50
41-59 minutes	20.9	91
1-3 hours	40.6	177
4-6 hours	6.0	26
7 or more hours	2.6	11
Frequency of checking social media and e-mail	*%*	*n*
Never	0.2	1
1-2 time per week	1.8	8
3 or more times per week	2.3	10
On a daily basis	20.6	90
Several times a day	75.0	327

Table 3.2 (cont'd)

Computer Proficiency	%	*n*
Novice	1.1	5
Intermediate	33.9	148
Advanced	51.4	224
Highly Skilled	13.5	59
Most common social media sites	%	*n*
1. Facebook	97.7	426
2. Snapchat	84.9	370
3. Instagram	73.4	320
4. Twitter	68.6	299
5. YouTube	67.4	294
6. LinkedIn	43.3	189
7. Yik Yak	33.9	148
8. Vine	29.4	128
9. Tumblr	28.2	123
10. Reddit	15.8	69

Bullying Perpetration and Victimization

Almost 50% of the participants (n = 217) reported experiencing bullying victimization since attending college (see Table 3.3). Of those who experienced bullying since attending college, 23.9% (n = 104) stated they had been called mean, inappropriate, or offensive names by another student, 22% (n = 96) reported being purposely left out from peer activities, and 21.8% (n = 95) reported having another student make sexually inappropriate comments towards them. The majority of bullying that occurred on campus took place in the dorms or other on-campus housing (23.9%, n = 104) or at campus events (7.8%, n = 34). The most common reasons victims felt they were targeted was because of their looks (17.7%, n = 77) or because of personal conflict with the perpetrator (16.5%, n = 72). About 14% (n = 63) of those who experienced bullying stated they were unsure of why they were targeted.

The majority of the sample reported never engaging (74.5%, *n* = 325) in bullying perpetration. Of those students who admitted to bullying another student, 14.4% (*n* = 63) stated they had called another student mean, inappropriate, or offensive names, 13.5% (*n* = 59) reported purposely leaving someone out of peer activities, and 7.3% (*n* = 32) reported teasing or taunting another student. Students who admitted to bullying another student reported that these events tended to take place in off-campus housing (6.7%, *n* = 29), in the cafeteria (3.9%, *n* = 17), in the classroom (3.7%, *n* = 16), or during campus events (3.7%, *n* = 16). Personal conflict was reported as the most common reason perpetrators targeted their victims (15.4%, *n* = 67). Additionally, 5.3% (*n* = 23) of perpetrators targeted their victims because they thought they were weird or different and 1.8% (*n* = 8) targeted their victim because of the way they looked.

Table 3.3

Bullying Victimization and Perpetration Scale

Bullying Victimization	%	*n*
I have not experienced any of these behaviors since college	49.8	217
Been called mean, inappropriate things	23.9	104
Been left out another student from peer activities	22.0	96
Had someone make sexually inappropriate	21.8	95
Been teased/taunted	17.4	76
Had someone spread rumors	12.6	55
Been threatened or blackmailed	4.4	19
Been physically assaulted	3.4	15
Been hit, kicked, or tripped	2.3	10
Bullying Perpetration	%	*n*
I have not engaged in any of these behaviors since college	74.5	325
Said mean, inappropriate things	14.4	63
Purposely left out from peer activities	13.5	59
Teased/taunted	7.3	32
Spread rumors	3.2	14
Made sexually inappropriate	3.0	13
Been threatened or blackmailed	1.8	8

Table 3.3 (cont'd)

Physically assaulted	1.4	6
Been hit, kicked, or tripped	1.1	5

To examine the mediation effects of the negative emotional states of depression, stress and anxiety on the relationship between cyberbullying victimization and bullying perpetration, a parallel multiple mediation analysis was conducted using maximum likelihood logistics regression. The independent variable was cyberbullying victimization and the dependent variable in the model was traditional bullying perpetration. Model coefficients, direct and indirect effects, and total effects are reported in unstandardized form as suggested by Hayes (2013). Gender, sexual orientation, ethnicity, class status and birth year were used as control demographic variables.

Results indicated that cyberbullying victimization failed to indirectly influence bullying perpetration through the effects of the three negative emotional states. As can be seen in Figure 3.1 and Table 3.4, the total effects of the mediation model was significant (*-2LL* = 452.57, *Model LL* = 35.80, $p < .01$, *Nagelkerke* $R^2 = .12$). Participants who reported being a victim of cyberbullying perpetration reported higher levels of anxiety ($a_1 = 2.32$), depression ($a_2 = 2.26$), and stress ($a_3 = 3.45$) than non-victims. Anxiety ($b_1 = .01$) did not influence bullying perpetration when controlling for all other mediators. Depression ($b_2 = .00$) also failed to influence bullying perpetration when controlling for all other mediators. Finally, stress ($b_3 = .04$) also failed to influence bullying perpetration when controlling for all other mediators. A 95% bias-corrected bootstrap confidence interval for the indirect effects for anxiety (*ab* = .03), depression (*ab* = .01), and stress (*ab* = .15) based on 10,000 bootstrap samples did not stay above zero for anxiety (-.08 to .18), depression (-.09 to .03), or stress (-.01 to .39). Therefore, the negative emotional states of

anxiety, depression, and stress, mediate the relationship between cyberbullying victimization and bullying perpetration when not controlling for the other mediators, although fail to mediate this relationship when examined independently and controlling for the other mediators. In addition, there was a significant direct effect between cyberbullying victimization and bullying perpetration ($c' = 1.34$, $p = .001$), prior to controlling for stress, depression, and anxiety. As such, postsecondary students who reported experiencing cyberbullying victimization also reported engaging in bullying perpetration. A Chi-square test for independence (with Yate's continuity correction) indicated that there was a significant association between cyberbullying victimization and traditional bullying perpetration X^2 (1, $n = 429$) = 17.55, $p < .001$, *phi* = .21. According to Cohen (1988) an effect size of .21 indicates a small effect size using the criteria of .20 for small effect size, .50 for a medium effect size, and .80 for a large effect size. Finally, total effects remained significant ($c' = 1.47$, $p = .001$), after controlling for stress, depression, and anxiety.

Figure 3.1

Cyberbullying Victimization and Bullying Perpetration Mediation Model

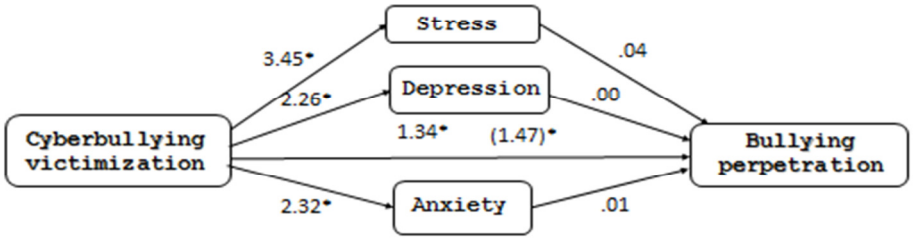


Figure 3.1 (cont'd)

Note: Stress, depression, and anxiety as mediators in the relationship between cyberbullying victimization and bullying perpetration. Unstandardized path coefficients are presented. The coefficients in parentheses represent the direct relationship between variables, before the mediators were included in the model. *$p < .01$

Table 3.4

Cyberbullying Victimization and Bullying Perpetration Mediation Model Summary

		Anxiety				**Depression**				**Stress**				**Bully Perp**		
		Coeff	SE	*P*		Coeff	SE	*P*		Coeff	SE	*P*		Coeff	SE	*P*
Cyber-victim	a_1	2.32	.81	**.01**	a_2	2.26	.86	**.01**	a_3	3.45	.83	**.01**	c'	1.34	.34	**.01**
Anxiety		----	----	----		----	----	----		----	----	----	b_1	.01	.03	.61
Depression		----	----	----		----	----	----		----	----	----	b_2	.00	.02	.89
Stress		----	----	----		----	----	----		----	----	----	b_3	.04	.03	.09
Gender		1.17	.76	.12		-.01	.80	.99		1.78	.77	.02		-.69	.25	**.01**
Sex		-4.55	1.39	**.01**		-5.51	1.47	**.01**		-4.61	1.41	**.01**		.21	.47	.65
Ethnicity		-1.66	.87	.06		-2.91	.92	**.01**		-2.19	.88	**.01**		-.56	.28	.05
Birth Year		-.23	.41	.57		-.67	.43	.12		-.66	.42	.11		-.56	.28	.05
Constant	i_{m1}	27.07	4.00	**.01**	i_{m2}	33.19	4.26	**.01**	i_{m3}	32.99	4.08	**.01**	i_y	-4.81	1.47	**.01**
		$R^2 = .06$				$R^2 = .07$				$R^2 = .09$						
		$F(6,415) = 4.52$,				$F(6,415) = 5.14$,				$F(6,415) = 6.68$,				-2LL = 452.57, Model LL = 35.80		
		***p* < .01**				***p* < .01**				***p* < .01**				**p < .01**, Nagelkerke R2 = .12		

Cyberbullying Victimization and Cyberbullying Perpetration

Close to 26% (n = 113) of respondents report never experiencing cyberbullying victimization (see Table 3.5). Conversely, 74% (n =323) of respondents report being cyberbullied at least a few times a year or more. Of those who experienced cyberbullying victimization, the majority, 46.6% (n = 203) reported being cursed at by someone electronically. About 36% (n = 203) of victims in the sample reported that someone had been mean to them electronically and about 35% (n = 150) had an embarrassing picture of them posted electronically where others could see it.

Nearly 54% (n = 234) of the respondents stated they have never cyberbullied another student since college, while 46% (n = 202) admitted to cyberbullying another student at least a

few times a year since attending college. Of those who did admit to cyberbullying another student since college, 31.9% (n = 111) admitted to cursing at someone, 25.5% (n = 111) stated they lied about themselves to someone electronically, and 20% (n = 87) had been mean to someone electronically.

Table 3.5

Cyberbullying Victimization and Cyberbullying Perpetration

Victimization	*%*	*n*
Someone pretend to be someone else	16.1	70
Shared information with fake identity	11.9	52
Received unwanted pornographic picture	16.1	70
Had picture of you negatively changed and posted	9.2	42
Received offensive picture electronically	20.2	88
Someone lied about themselves	31.9	139
log into your account and change information	8.5	37
Received unwanted sexual message	26.8	117
Received a nude picture	17.4	76
Had a nude picture of you posted	4.8	21
Teased	30.0	131
Treated mean	36.2	158
Called you mean names	31.9	139
Distributed information about you	8.3	36
Made survey answers public	9.6	30
Written mean messages about you publicly	17.4	76
Posted an embarrassing picture	34.9	152
Printed an electronic conversation	10.1	44
Made fun of you	33.7	147
Cursed at you	46.6	203
Logged into your account and pretended to be you	12.6	55
Perpetration	*%*	*n*
Pretend to be someone else	7.8	34
Cursed at someone	5.3	23
Sent rude message	10.8	47
Lied about yourself	25.5	111
Sent unwanted nude pictures	6.4	28
Called someone mean names	19.5	85
Been mean	20.0	87

Table 3.5 (cont'd)

Teased someone	19.5	85
Tried to get information	8.3	36
Posted embarrassing pictures of someone	13.8	60
Posted picture someone didn't want posted	9.6	42
Made fun of someone	16.5	72
Cursed at Someone	31.9	139

To examine the mediation effects of the negative emotional states of depression, stress and anxiety on the relationship between cyberbullying victimization and cyberbullying perpetration, a parallel multiple mediation analysis was conducted using maximum likelihood logistics regression. The independent variable was cyberbullying victimization and the dependent variable in the model was cyberbullying perpetration. Model coefficients, direct and indirect effects, and total effects are reported in unstandardized form as suggested by Hayes (2013). Again, gender, sexual orientation, ethnicity, class status, and birth year were used as control demographic variables.

Results indicated that cyberbullying victimization failed to indirectly influence cyberbullying perpetration through the effects of the three negative emotional states. As can be seen in Figure 3.2 and Table 3.6, the total effects of the mediation model was significant (*-2LL* = 495.75, *Model LL* = 94.88, $p < .01$, *Nagelkerke* $R^2 = .27$). Participants who reported being a victim of cyberbullying perpetration reported higher levels of anxiety ($a_1 = 2.44$), depression ($a_2 = 2.31$), and stress ($a_3 = 3.55$) than non-victims. Anxiety ($b_1 = .02$) did not influence cyberbullying perpetration when controlling for all other mediators. Depression ($b_2 = .03$) also failed to influence bullying perpetration when controlling for all other mediators. Finally, stress ($b_3 = .00$) also failed to influence cyberbullying perpetration when controlling for all other mediators. A 95% bias-corrected bootstrap confidence interval for the indirect effects for anxiety

(*ab* = .04), depression (*ab* = .06), and stress (*ab* = -.01) based on 10,000 bootstrap samples did not stay above zero for anxiety (-0.07 to 0.20), depression (-0.03 to 0.21), or stress (-.19 to .18). Taken together, this suggests, the negative emotional states of anxiety, depression, and stress significantly influence the relationship between cyberbullying victimization and cyberbullying perpetration. There was a significant direct effect between cyberbullying victimization and cyberbullying perpetration ($c' = 2.48$, $p = .001$), prior to controlling for stress, depression, and anxiety. As such, postsecondary students who reported experiencing cyberbullying victimization also reported engaging in cyberbullying perpetration. A Chi-square test for independence (with Yate's continuity correction) indicated that there was a significant association between cyberbullying victimization and cyberbullying perpetration X^2 (1, $n = 436$) = 76.30, $p < .001$, *phi* = .21. According to Cohen (1988) an effect size of .42 indicates a medium effect size using the criteria of .20 for small effect size, .50 for a medium effect size, and .80 for a large effect size. Finally, total effects remained significant ($c' = 2.53$, $p = .001$), after controlling for stress, depression, and anxiety.

Figure 3.2

Cyberbullying Victimization and Cyberbullying Perpetration Mediation Model

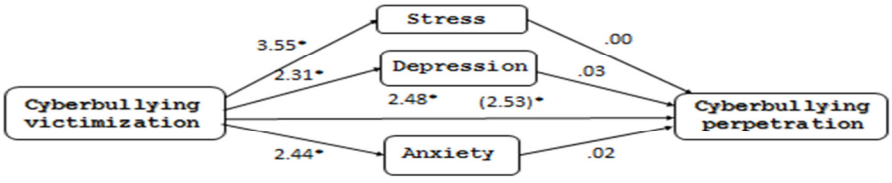


Figure 3.2 (cont'd)

Note: Stress, depression, and anxiety as mediators in the relationship between cyberbullying victimization and perpetration. Unstandardized path coefficients are presented. The coefficients in parentheses represent the direct relationship between variables, before the mediators were included in the model. *$p < .01$

Table 3.6

Cyberbullying Victimization and Cyberbullying Perpetration Mediation Model Summary

		Anxiety				**Depression**				**Stress**				**Cyberbully Perp**		
		Coeff	SE	*P*		Coeff	SE	*P*		Coeff	SE	*P*		Coeff	SE	*P*
Cyber-victim	a_1	2.44	.80	**.01**	a_2	2.31	.85	**.01**	a_3	3.55	.81	**.01**	c'	2.48	.34	**.01**
Anxiety		----	----	----		----	----	----		----	----	----	b_1	.02	.03	.49
Depression		----	----	----		----	----	----		----	----	----	b_2	.03	.02	.22
Stress		----	----	----		----	----	----		----	----	----	b_3	**.01**	.02	.94
Gender		1.17	.75	.12		.04	.80	.96		1.78	.76	.02		-.47	.24	.05
Sex		-4.56	1.38	**.01**		-5.45	1.47	**.01**		-4.59	1.40	**.01**		.27	.44	.54
Ethnicity		-1.70	.86	**.01**		-2.88	.92	**.01**		-2.20	.88	**.01**		-.10	.28	.72
Birth		-.19	.40	.63		-.63	.43	.14		-.63	.41	.13		.27	.13	.03
Class		-.96	.52	.19		-.50	.56	.37		-.63	.41	.13		.27	.13	.03
Constant	i_{m1}	26.66	3.96	**.01**	i_{m2}	32.73	4.21	**.01**	i_{m3}	32.59	4.03	**.01**	i_y	-5.34	1.37	**.01**
		$R^2 = .06$				$R^2 = .07$				$R^2 = .09$						
		$F(6,421) = 4.71$,				$F(6,421) = 5.16$,				$F(6,421) = 6.92$,				*-2LL* = 495.75, *Model LL* = 94.88,		
		$p < .01$				**$p < .01$**				**$p < .01$**				**$p < .01$**, *Nagelkerke* $R^2 = .27$		

Cyberbullying Victimization and Self-harm

About 15% ($n = 66$) of participants stated they engaged in self-harming behaviors. For those who reported a lifetime prevalence of self-harming behavior, 8.5% ($n = 66$) reported that they had continued to engage in self-harming behaviors since attending college. Participants identified cutting (30.3%, $n = 20$), banging and hitting oneself (10.6%, $n = 7$), and scratching (7.6%, $n = 5$) as their main forms of self-harm. After feeling triggered to self-harm, 52.3% ($n = 34$) of participants did so within less than an hour, 13.8% ($n = 9$) of participants did so within 1 to 3 hours, and 21.5% ($n = 5$) self-harmed 24 or more hours after being triggered and feeling the urge to self-harm.

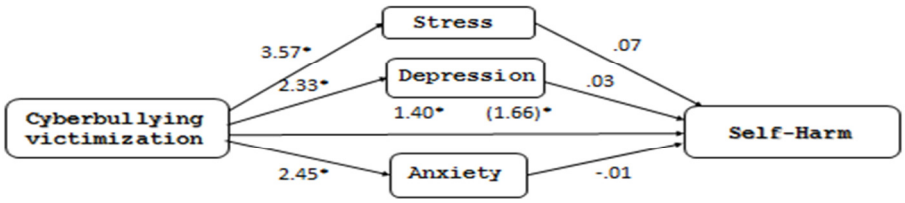
To examine the mediation effects of the negative emotional states of depression, stress and anxiety on the relationship between cyberbullying victimization and self-harming behaviors, a parallel multiple mediation analysis was conducted using maximum likelihood logistics regression. The independent variable was cyberbullying victimization and the dependent variable in the model was cyberbullying perpetration. Model coefficients, direct and indirect effects, and total effects are reported in unstandardized form as suggested by Hayes (2013). Again, gender, sexual orientation, ethnicity, class status, and birth year were used as control demographic variables.

Results indicated that cyberbullying victimization failed to indirectly influence bullying perpetration through the effects of the three negative emotional states. As seen in Figure 3.3 and Table 3.7, the total effects of the mediation model was significant (*-2LL* = 314.99, *Model LL* = 42.34, $p < .01$, *Nagelkerke* $R^2 = .17$). Participants who reported being a victim of cyberbullying perpetration reported higher levels of anxiety ($a_1 = 2.45$), depression ($a_2 = 2.33$), and stress ($a_3 = 3.57$) than non-victims. Anxiety ($b_1 = -.01$) did not influence bullying perpetration when controlling for all other mediators. Depression ($b_2 = .03$) also failed to influence bullying perpetration when controlling for all other mediators. However, stress ($b_3 = .07$) level did influence bullying perpetration when controlling for all other mediators. Those who reported higher levels of stress reported engaging in self-harming behaviors. A 95% bias-corrected bootstrap confidence interval for the indirect effects for anxiety (*ab* = -.02) and depression (*ab* = .08) based on 10,000 bootstrap samples did not stay above zero for anxiety (-.24 to .16) or depression (-.03 to .26). However, for stress (*ab* = .26) the confidence interval stayed above zero (.01 to .63). There was evidence that cyberbullying victimization influenced self-harm behaviors independent of the negative emotional states ($c' = 1.40$, $p = .001$). A Chi-square test for

independence (with Yate's continuity correction) indicated that there was a significant association between cyberbullying victimization and self-harming behaviors X^2 (1, n = 434) = 12.67, p < .001, *phi* = .18. According to Cohen (1988) an effect size of .21 indicates a small effect size using the criteria of .20 for small effect size, .50 for a medium effect size, and .80 for a large effect size. Finally, total effects remained significant (c' = 1.66, p = .001), after controlling for stress, depression, and anxiety.

Figure 3.3

Cyberbullying Victimization and Self-harm Mediation Model



Note: Stress, depression, and anxiety as mediators in the relationship between cyberbullying victimization and self-harm. Unstandardized path coefficients are presented. The coefficients in parentheses represent the direct relationship between variables, before the mediators were included in the model. *p < .01

Table 3.7

Cyberbullying Victimization and Self-harm Mediation Model Summary

		Anxiety				Depression				Stress				Self-harm		
		Coeff	SE	*P*		Coeff	SE	*P*		Coeff	SE	*P*		Coeff	SE	*P*
Cyber-victim	a_1	2.45	.80	**.01**	a_2	2.33	.85	**.01**	a_3	3.57	.82	**.01**	c'	1.40	.51	**.01**

Table 3.7 (cont'd)

Anxiety		----	----	----		----	----	----		----	----	----	b_1	-.01	.03	.80
Depression		----	----	----		----	----	----		----	----	----	b_2	.03	.03	.19
Stress		----	----	----		----	----	----		----	----	----	b_3	.07	.03	.02
Gender		1.18	.75	.12		.06	.80	.94		1.80	.76	.02		1.38	.42	**.01**
Sex		-4.54	1.38	**.01**		-5.44	1.47	**.01**		-4.57	1.40	**.01**		-.78	.48	.10
Ethnicity		-1.69	.86	.05		-2.87	.92	**.01**		-2.18	.88	**.01**		-.11	.37	.77
Birth Year		-.19	.41	.64		-.63	.43	.14		-.62	.41	.13		-.17	.17	.30
Class		-.70	.52	.18		-.51	.56	.36		-.61	.53	.25		-.25	.22	.26
Constant	i_{m1}	26.64	3.96	**.01**	i_{m2}	32.70	4.22	**.01**	i_{m3}	32.56	4.03	**.01**	i_y	-4.15	1.81	.02
		$R^2 = .06$				$R^2 = .07$				$R^2 = .09$						
		$F(6,420) = 4.73$,				$F(6,420) = 5.13$,				$F(6,420) = 6.93$,			$-2LL = 314.99$, *Model LL* = 42.34,			
		$p < .01$				$p < .01$				$p < .01$			$p < .01$, *Nagelkerke* $R^2 = .17$			

Cyberbullying Victimization and Self-cyberbullying

Finally, participants were asked if they had ever engaged in self-cyberbullying. Eleven students (2.5%) stated they had engaged in self-cyberbullying ever while eight (1.8%) students reported engaging in self-cyberbullying since attending college at the participating university. Five students (62.5%) who self-cyberbullied posted something mean about themselves anonymously online on a social network site such as YouTube, Twitter, Yik Yak, Facebook or Tumblr.

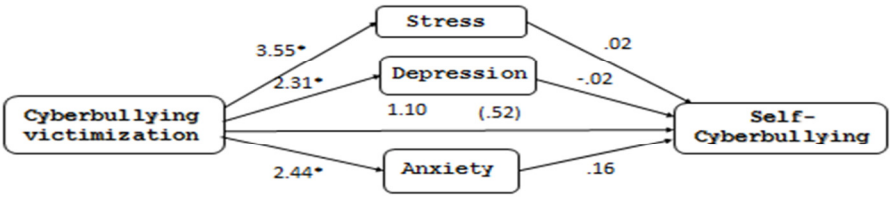
To examine the mediation effects of the negative emotional states of depression, stress and anxiety on the relationship between cyberbullying victimization and self-harming behaviors, a parallel multiple mediation analysis was conducted using maximum likelihood logistics regression. The independent variable was cyberbullying victimization and the dependent variable in the model was cyberbullying perpetration. Model coefficients, direct and indirect effects, and total effects are reported in unstandardized form as suggested by Hayes (2013). Again, gender, sexual orientation, ethnicity, class status, and birth year were used as control demographic variables.

Results indicated cyberbullying victimization failed to indirectly influence self-cyberbullying through the effects of the three negative emotional states. As can be seen in Figure

3.4 and Table 3.8, the total effects of the mediation model was non-significant (*2LL = 71.83, Model LL = 7.70, p > .01, Nagelkerke* R^2 *= .11*). Participants who reported being a victim of cyberbullying perpetration reported higher levels of anxiety (a_1 = 2.44), depression (a_2 = 2.31), and stress (a_3 = 3.55) than non-victims. Anxiety (b_1 = .16) did not influence bullying perpetration when controlling for all other mediators. Depression (b_2 = -.02) also failed to influence bullying perpetration when controlling for all other mediators. Finally, stress (b_3 = .02) also failed to influence cyberbullying perpetration when controlling for all other mediators. A 95% bias-corrected bootstrap confidence interval for the indirect effects for anxiety (*ab* = .38), depression (*ab* = -.06), and stress (*ab* = .07) based on 10,000 bootstrap samples did not stay above zero for anxiety (-.06 to .88), depression (-1.48 to .44), or stress (-1.16 to 1.96). Results showed that there was not a significant direct effect between cyberbullying victimization and cyberbullying perpetration (c' = .52, p = .66), prior to or after controlling (c' = 1.10, p = .31) for stress, depression, and anxiety. As such, postsecondary students who reported experiencing cyberbullying victimization did not report also engaging in self-cyberbullying perpetration at a significant rate. Given the small number of people who admitted to self-cyberbullying, this finding is not surprising and should be interpreted with caution. A Chi-square test for independence (with Yate's continuity correction) indicated that there was no significant association between cyberbullying victimization and engaging in self-cyberbullying X^2 (1, n = 435) = .22, p = .69, *phi* = .042. According to Cohen (1988) an effect size of .21 indicates a small effect size using the criteria of .20 for small effect size, .50 for a medium effect size, and .80 for a large effect size.

Figure 3.4

Cyberbullying Victimization and Self-cyberbullying Mediation Model



Note: Stress, depression, and anxiety as mediators in the relationship between cyberbullying victimization and self-cyberbullying. Unstandardized path coefficients are presented. The coefficients in parentheses represent the direct relationship between variables, before the mediators were included in the model. *$p < .01$

Table 3.8

Cyberbullying Victimization and Self-cyberbullying Mediation Model Summary

		Anxiety				**Depression**				**Stress**				**Self-harm**		
		Coeff	SE	*P*		Coeff	SE	*P*		Coeff	SE	*P*		Coeff	SE	*P*
Cyber-victim	a_1	2.44	.80	**.01**	a_2	2.31	.85	**.01**	a_3	3.55	.81	**.01**	c'	.52	1.16	.66
Anxiety		----	----	----		----	----	----		----	----	----	b_1	.16	.08	.05
Depression		----	----	----		----	----	----		----	----	----	b_2	-.02	.07	.72
Stress		----	----	----		----	----	----		----	----	----	b_3	.02	.09	.82
Gender		1.17	.75	.12		.04	.80	.96		1.78	.76	.02		-.33	.86	.70
Sex		-4.56	1.38	**.01**		-5.45	1.47	**.01**		-4.59	1.40	**.01**		-.96	.97	.70
Ethnicity		-1.70	.86	.05		-2.88	.92	**.01**		-2.20	.88	**.01**		-1.36	.86	.11
Birth		-.19	.40	.63		-.63	.43	.14		-.63	.41	.13		-.04	.54	.95
Class		-.69	.52	.19		-.50	.56	.37		-.60	.53	.26		.02	.65	.98
Constant	i_{m1}	26.66	3.96	**.01**	i_{m2}	32.73	4.21	**.01**	i_{m3}	32.59	4.03	**.01**	i_y	-6.39	5.08	.21
		$R^2 = .06$				$R^2 = .07$				$R^2 = .09$						
		$F(6,421) = 4.71$,				$F(6,421) = 5.16$,				$F(6,421) = 6.92$,				*-2LL* = 71.83, *Model LL* = 7.70,		
		***p* < .01**				***p* < .01**				***p* < .01**				$p > .01$, *Nagelkerke* $R^2 = .11$		

CHAPTER 4: Discussion

By its definition, cyberbullying qualifies as a major type of strain that can lead to delinquent acts as it requires intentionality, repetition over an extended period of time, and a power imbalance. This power differential may increase victims' sense of unjustness because they are not able to control what information is shared publically about them or stop their perpetrator from harassing them (Francisco et al., 2015; Willard, 2007). In order for strain to lead to delinquent or aggressive behaviors it must: (1) occur for an extended period of time, (2) be high in magnitude, (3) be perceived as unjust, and (4) create enough pressure to endorse delinquent behaviors (Agnew, 1992). According to general strain theory (Agnew, 1992), negative emotions would be expected to mediate the relationship between an antecedent and delinquent behavior. Therefore, the present study used general strain theory to examine the relationship between cyber-victimization and internalized and externalized delinquent behaviors (Hay & Meldrum, 2010).

Summary of Main Findings

This dissertation had two main objectives: (1) to examine how being a victim of cyberbullying during college influence a students' emotional states by comparing levels of self-reported anxiety, depression, and stress between self-reported victimized and non-victimized postsecondary students, and (2) to examine the role in which these negative emotional states influence victims internal and externalized delinquent behaviors. Specifically, internalized delinquent behaviors included self-harming behaviors and self-cyberbullying while externalized delinquent behaviors include bullying and cyberbullying perpetration. An online self-report survey through Qualtrics was administered and completed by 436 undergraduates at a large Midwestern university.

Negative Emotions Associated with Cyberbullying Victimization

To achieve the goals stated above, this dissertation investigated three main research questions. The first was: do students who experience cyber-victimization during college experience higher levels of negative emotional states, specifically, anxiety, depression and stress compared to non-victims? The following was hypothesized:

> ***H1a:*** *Students who report experiencing cyber-victimization will report experiencing higher levels of anxiety than non-victimized students.*
>
> ***H1b:*** *Students who report experiencing cyber-victimization will report experiencing higher levels of depression than non-victimized students.*
>
> ***H1c:*** *Students who report experiencing cyber-victimization will report experiencing higher levels of stress than non-victimized students.*

Support for all three hypotheses was found. Being a victim of cyberbullying significantly and positively influenced levels of anxiety, depression, and stress. That is, postsecondary students who identified as being victims of cyberbullying since attending college reported elevated levels of anxiety, depression, and stress as compared to students who did not report being a victim of cyberbullying. These results are similar to those reported in prior research, which shows that victims of cyberbullying victimization at the postsecondary level experience adverse emotions in response to this victimization (Dunkley, Blankstein, Halsall, Williams & Winkworth, 2000; Kassel, Bornovalova & Mehta, 2007; Schenk & Fremouw, 2012; Zhou, Zhu, Zhang & Cai, 2013). Similar to the consequences of victimization associated with younger populations, postsecondary cyberbullying victims report elevated levels of depression, suicidal thoughts/ideations, paranoia, anxiety, and fear (Faucher et al., 2014; Schenk & Fremouw, 2012).

Mediation of Negative Emotions

The second research question examined whether negative emotional states influence the relationship between cyber-victimization and delinquent behavior? The following was hypothesized:

> ***H2a:*** *The negative emotional state of anxiety will mediate the relationship between cyber-victimization and external delinquent behavior.*
>
> ***H2b:*** *The negative emotional state of anxiety will mediate the relationship between cyber-victimization and internal delinquent behavior.*
>
> ***H2c:*** *The negative emotional state of depression will mediate the relationship between cyber-victimization and external delinquent behavior.*
>
> ***H2d:*** *The negative emotional state of depression will mediate the relationship between cyber-victimization and internal delinquent behavior.*
>
> ***H2e:*** *The negative emotional state of stress will mediate the relationship between cyber-victimization and external delinquent behavior.*
>
> ***H2f:*** *The negative emotional state of stress will mediate the relationship between cyber-victimization and internal delinquent behavior.*

According to Agnew, the most conducive emotion for delinquent behavior is anger, which can lower one's inhibition, create a desire to seek revenge, have an energizing effect, and provide justification for delinquent behaviors. Other emotions such as depression, fear, guilt or shame, can also lead to delinquency (Broidy & Agnew, 1997). The current study, however, found that the negative emotional state of anxiety failed to mediate the relationship between cyberbullying victimization and both external and internal delinquent behaviors. Therefore, no support was found for hypothesis *2a* or *2b.* Perhaps anxiety fails to mediate this relationship

because it does not meet the threshold needed to produce action or retaliation for cyberbullying victims, or does not align with Agnew's ideas regarding anger.

The negative emotional state of depression also failed to mediate the relationship between cyberbullying victimization and both external and internal delinquent behaviors. Therefore, no support was found for hypothesis *2c* or *2d.* The symptoms of depression often leave an individual debilitated, influencing their energy level, appetite, sleep, and decreasing their ability to feel pleasure or enjoy life (American Psychiatric Association, 2013). None of these symptoms produce an energizing effect. Therefore, although this emotion is associated with cyberbullying victimization and external and internal delinquent behaviors, it does not appear to provide enough strain or energy to merit retaliation.

The negative emotional state of stress failed to mediate the relationship between cyberbullying victimization and the external delinquent behaviors of bullying and cyberbullying perpetration, providing no support for hypothesis *2e.* However, support was found regarding hypothesis *2f.* That is, stress mediated the relationship between cyberbullying victimization and self-harming behaviors among postsecondary students. Individuals who engage in self-harm report experience strong, negative emotional states prior to engaging in harming behaviors (Nock & Mendes, 2008). It appears that, in particular, stress influences the association between being victimized and engaging in self-harming behaviors.

Finally, although depression, anxiety, and stress failed to mediate most of the predicted outcomes and cyberbullying victimization independently, they did mediate the relationship between cyberbullying victimization and bullying perpetration, cyberbullying perpetration, and self-harm together. That is, taken together the combined effect of anxiety, depression, and stress were able to mediate the relationship between cyberbullying victimization and online/offline

perpetration and self-harm. Perhaps individual effects are not strong enough, but when combined they can provide an individual with the 'energy' needed to perpetrate in retaliation to the perpetrator, or against themselves.

Cyberbullying Victimization and Delinquent Behaviors

The final question postulated: do postsecondary cyber-victims report higher levels of external and internal delinquent behaviors than non-victims? It was hypothesized that:

> ***H3a:*** *Students who identify as being victims of cyberbullying since attending postsecondary institutions will report engaging in traditional perpetration more often than non-victims.*
>
> ***H3b:*** *Students who identify as being victims of cyberbullying since attending postsecondary institutions will report engaging in cyberbullying perpetration more often than non-victims.*
>
> ***H3c:*** *Students who identify as being victims of cyberbullying since attending postsecondary institutions will report engaging in more self-harming behaviors than non-victims.*
>
> ***H3d:*** *Students who identify as being victims of cyberbullying since attending postsecondary institutions will report engaging in more self-cyberbullying than non-victims.*

Support for hypothesis *3a* was found. That is, students who report being victimized also reported engaging in traditional perpetration. The present study found that around 26% of students admitted to bullying another student. Results indicated that bullying took place on and off campus at similar rates, but when it took place on campus it occurred most often in the dorms or on campus housing. Perpetrators of bullying stated they targeted their victims due to personal

conflict, their looks, or because they thought the student was weird or different. These results provide important guidance on the need for future research because it is not well-researched or currently understood. These results indicate that bullying perpetration among postsecondary students should continue to be an area of research since there is, in fact, bullying that is occurring on college campuses. This finding could potentially be helpful when considering prevention methods as some students who perpetrate may be doing so as a way to gain control. Providing mental health services to perpetrators may help them gain a sense of control without having to retaliate.

Additionally, support was found for hypothesis *3b* which hypothesized that students who reported being a victim of cyberbullying would engage in more cyberbullying perpetration than non-victims. The current study found that 46% of participants in the study admitted to cyberbullying another student at least a few times a year since attending college. This statistic is higher than the almost 9% reported by MacDonald and Roberts-Pittman (2010). However, this difference in reporting may be due to difference in definitions used in the studies to solicit feedback about cyberbullying as well approaches and measures used to quantify cyberbullying perpetration. The current study had 13 specific questions looking at different cyberbullying perpetration behaviors while MacDonald and Roberts-Pittman's (2010) definition was vague. Consistency in measures used for future research would lead to more accurate and helpful comparisons to better understand the prevalence of cyberbullying behaviors. This study found that the most common types of cyberbullying behaviors perpetrators engaged in included lying about themselves electronically, calling someone a mean name, and sending a partially nude or nude picture to someone who did not want it. Some of these behaviors may also lead to questions about the relationship between cyberbullying and sexual harassment. It is possible that some

individuals may view these behaviors as less serious given the online nature, but in reality, these behaviors represent instances of sexual harassment. There is currently a climate of fears regarding sexual harassment, and other serious offenses such as gender-based violence, on college campuses. Therefore, this provides an additional reason that colleges should prioritize prevention programs while also continuing and expanding support programs for individuals who perpetrate cyberbullying or may be victims.

Additionally, students who reported cyberbullying victimization also reported engaging in self-harming behaviors, providing support for hypothesis *3c*. The current study found that about 15% of participants in the study engaged in self-harming behaviors and of those, about 9% reported engaging in self-harming behaviors since attending college. These reported rates are well below those reported by Hamza and Willoughby (2014) who found that 46% of their college sample reported a history of self-harm and current engagement during their first and second year of college. This difference could potentially be due to how self-harming behaviors were measured. For the current study, engaging in self-harming behaviors was indicated by a dichotomous (yes/no) question. However, Hamza and Willoughby (2014) conceptualized self-harming behaviors based on frequency. Perhaps participants are less likely to indicate their experience of self-harm on a dichotomous question versus one where they can indicate how many times they engaged in each behavior. Asking the question in ways that allow respondents to indicate the number of times or frequency, or more specifically, to indicate this for a variety of types of self-harming behaviors may help reduce stigma associated with the idea of being someone who engages in self-harm by simply having them indicate a number of times they engaged in some type of behavior.

The majority of other studies found more conservative estimates that align with the current study's estimates (Heath et al., 2008; Whitlock et al., 2006; Wilcox et al., 2012). Among postsecondary students, lifetime prevalence rates tend to be between 9-17% (Heath et al., 2008; Whitlock et al., 2006; Wilcox et al., 2012), while rates of currently engaging in such behaviors range between 2-7% (Gollust et al., 2008; Wilcox et al., 2012). Additionally, similar to previous studies, participants in the current study identified cutting, banging and hitting oneself, and scratching as their main forms of self-harm (Briere & Gil, 1998; Hamza & Willoughby, 2014; Heath et al., 2008; Klonsky, 2007; Laye-Gindu & Schonert-Reichl, 2005; Nock, 2010; Whitlock et al., 2011). Finally, over half of participants indicted that after feeling triggered they engaged in self-harming behaviors within an hour, while almost 22% were able to abstain from self-harming for 24 or more hours after being triggered and feeling the urge to self-harm; this may indicate that, for some students, there is a window of opportunity to provide support. College mental health support services should keep this in mind and consider the possibility of marketing their on-campus psychological supports in ways that help students make a connection between the triggers they feel and the ability to reach out for support before they engage in self-harming behaviors.

Finally, this study investigated the phenomenon of self-cyberbullying, which occurs when someone anonymously and publicly posts hurtful, mean, or harassing messages about oneself online (Englander, 2012). It has been estimated that nearly 10% of undergraduates engage in self-cyberbullying during high school (Englander, 2012; Patchin, 2013), yet this phenomenon remains unexplored within youth and college samples. This study explored self-cyberbullying in greater depth to determine if this new online form of self-harm is a potential negative coping mechanism which warrants more research in the future. Only 2.5% of

undergraduate students indicated they had engaged in self-cyberbullying within their lifetime and only 1.8% students reported engaging in self-cyberbullying since attending college. This seems to suggest that students who used self-cyberbullying as a coping mechanism may continue to use it in college, although the frequency of this behavior may be lower among college-aged students as compared to high school students. Many of the students, who reported engaging in self-cyberbullying, did so by posting something online anonymously. They identified using YouTube, Twitter, Yik Yak, Facebook, and Tumblr to post these anonymous posts. Future research should investigate the reasons behind this type of cyberbullying to better understand students' triggers or reasoning behind this behavior in order to (better understand) how to provide prevention and support for these individuals.

There was no significant direct effect between cyberbullying victimization and self-cyberbullying prior to or after controlling for stress, depression, and anxiety. Therefore, cyberbullying victimization does not appear to be associated with self-cyberbullying behaviors and no support was found for hypotheses *3d*. As such, postsecondary students who reported experiencing cyberbullying victimization did not report also engaging in self-cyberbullying perpetration at a significant rate. Given the small number of people who admitted to self-cyberbullying, this finding is not surprising. Additionally, the negative emotions of anxiety, depression, and stress do not mediate the relationship between cyberbullying victimization and self-cyberbullying. Therefore, self-cyberbullying is a relatively low occurring behavior and appears to have little association with cyberbullying victimization, and levels of anxiety, depression, and stress.

In conclusion, the current study supports and expands on research examining cyberbullying among postsecondary students. There is currently a gap in the literature,

particularly in regards to the prevalence rate of victimization, possible differences among those who experience cyberbullying and those who do not, the mediating role of negative emotional states associated with victimization, and the utilization of negative coping mechanisms by cyberbullying victims. Therefore, this study helps fill in these gaps. Specifically, this study used general strain theory to examine how cyber-victimization influences an individual to engage in external and internal delinquent behavior. In the current study, external delinquent behaviors included offline traditional face-to-face bully perpetration and online cyberbullying perpetration, while self-harming behaviors and self-cyberbullying were considered internal deviate behaviors.

Results indicated that cyberbullying victimization is occurring on campus and is a concern that warrants more attention. Additionally, victims of cyberbullying are reporting engaging in bullying, perpetration, cyberbullying perpetration, and self-harm as higher rates than non-victims. The use of these negative coping mechanisms is important to understand. Prior research with this population has not fully examined how students cope with being victimized. Utilizing negative coping mechanisms further exacerbates the problem of victimization. Providing students with positive coping skills may be a vital step in preventing cyberbullying victimization on campus. Therefore, this study helps fill in a current gap in the literature by providing some information about coping mechanisms used by postsecondary students and offers some insight regarding possible prevention strategies.

Additionally, although independently, anxiety and depression, and for the most part stress, do not mediate the relationship between cyberbullying victimization and perpetration, self-harm, and self-cyberbullying. However, together, these emotions do have some effect on this relationship. This is an important finding because it gives some insight into why some cyberbullying victims later choose to become perpetrators themselves. Understanding that

negative emotions may motivate a student to seek revenge has important implications for prevention and intervention programs. Providing emotional support to cyberbullying victims may help alleviate the negative emotions they experience and end the cycle of cyberbullying victimization and perpetration.

Limitations

While the findings from this study provide important insight related to cyberbullying and young adults, there are some limitations that should be considered. First, although the sample size was moderate and representative of the population of students utilized for the study, the response rate was only 11%. Although similar to other studies conducted with a comparable study population (Walker, 2012), this response rate could introduce some bias. That is, those who chose to respond were in some way different than those who choose not to respond. As mentioned previously, participants included students who were currently enrolled at the university. Therefore, students who may have left the university because of being victimized are not included in the sample.

In addition, the majority of the sample identified as Caucasian, heterosexual, and was predominately female. Therefore, the experiences of those who identify as male, LBGTQ, and of a racial/ethnic minority, may not be present in the current study. In Addition, the university where this study was conducted is a large state university. Perhaps results would be different for minority serving institutions or at a private liberal arts college. More research is needed to better understand the context of the university or college and how this influences rates and experiences of bullying and cyberbullying victimization.

Second, this study was cross-sectional in nature and therefore causal associations among the variables should be considered with caution. A longitudinal study may more accurately

predict a temporal precedence. However, some research utilizing general strain theory suggests that cross-sectional research is best suited for this area of study due to the transitional nature of deviant behavior (Froggio, 2007). This is because some adolescence only engage in deviant behaviors during adolescents, when their cognitive ability has not yet reached maturity often leading to poor decisions. Once older, they develop the cognitive functioning and behavioral skills to make more positive and appropriate behavioral choices. This type of offender is known as a *limited offender.* This study potentially failed to capture a mediating effect between negative emotional states and negative coping mechanisms because postsecondary students are beyond this developmental transition and are better able to cope with cyberbullying victimization in a more positive way, even if they were *limited offenders* during their youth.

Third, only self-reported measures were utilized for this study. Participants may not have accurately remembered information they were asked to report. However, self-reported measures are the most commonly used method for ascertaining information about participants' subjective experiences (Graham et al., 2003) and have been the method used for most studies currently investigating cyberbullying among postsecondary students (Francisco et al., 2015; MacDonald & Roberts-Pittman, 2010; Rafferty & Vander Ven, 2014; Schenk & Fremouw, 2012; Walker, Sockman & Koehn, 2011). Future research would benefit from utilizing a variety of different types of measures for examining cyberbullying victimization. For example, employing focus groups to explore various topics related to cyberbullying victimization among college student may provide better insight since this would allow for a more in-depth examination. Most of the questions looking at bullying and cyberbullying in this study were general (i.e., has someone written mean messages about you publicly electronically) so getting more in-depth examples of what students are actually saying to each other may provide additional insight and guidance for

future prevention and intervention methods. The use of scenarios could also help gather information regarding cyberbullying without asking a participant to identify as a perpetrator or victim.

Finally, this study only examined bullying and cyberbullying victimization. However, research with younger populations suggests that cyberbullying victimization is associated with other co-occurring types of victimization (Mitchell et al., 2010). The exclusion of other types of victimization could therefore introduce some bias. This may be an important aspect to explore more thoroughly in the future. Despite these limitations, this study was the first to examine theoretical applications to the phenomenon of cyberbullying victimization among postsecondary students.

Implications and Future Research

Few studies have looked at traditional bullying among postsecondary students. However, the current study found that almost 50% of the participants reported experiencing bullying perpetration since attending their postsecondary education. This is in line with previous literature which suggests that between 43% (Rospenda et al., 2013) and 62% (Caravaca Sánchez et al., 2016) of postsecondary student's experience being bullied in postsecondary. Together, these results suggest that traditional bullying victimization is still common among university students and merits further investigation in the future. Past research indicates that traditional face-to-face bullying tends to occur at similar and potentially higher rates than cyberbullying (Sabella, Patchin, & Hinduja, 2013). Although this study found that cyberbullying victimization occurs at higher rates than those reported for tradition bullying, results still highlight the fact that prevention and intervention efforts for bullying must go beyond the elementary, middle, and high-school and focus on college campuses as well. Therefore, this study supports and extends

on the current literature examining the percentage of postsecondary students who are victims of bullying perpetration. Bullying is not an issue that affects only young children. Bullying may begin in elementary school and continue through college (Chapell et al., 2006). More research investigating traditional face-to-face bullying among postsecondary students is necessary, as results of this study show it is currently an issue among postsecondary students.

Additionally, as the use of the Internet continues to grow, the phenomenon of cyberbullying among all age groups should continue to be examined. The current study found that social media plays a substantial role in the lives of postsecondary students. The majority of participants (75%) reported checking their social media and personal email accounts several times a day and were able to do so from their cell phones. With such easy and convenient access, it is not surprising that over 75% of participants spent between 1 to 6 hours a day on their computer, while almost 13% of participants admitted to spending 7 or more hours on their computer each day. This is a substantial portion of the day spent online. Research suggests that the more time one spends online, the more likely they will become a victim of cyberbullying (Hinduja & Patchin, 2007).

The platforms most frequently associated with cyberbullying include e-mail, phone calls, text messaging, picture/video clips, social networking sites, instant messaging, chat rooms, and websites and applications (e.g., Snapchat) (Smith et al., 2008). The current study examined cyberbullying behaviors and the types of social networking sites and applications used to engage in these behaviors. Facebook, Snapchat, Instagram and Twitter are the most commonly utilized social networking platforms and potential arenas where cyberbullying can occur. However, future research should continue to examine the most common platforms utilized by postsecondary students and the types of victimization that take place on these platforms.

Technology is always advancing and changing, so understanding the current landscape of cyberbullying with postsecondary students will be important in order to help prevent this behavior in the future with various types of technology. This could provide valuable insight regarding what types of prevention methods would be most effective for postsecondary level perpetrators.

More research should explore why individuals cyberbully others, as well as how cyberbullying victimization affects those who are targeted. Although there is a plethora of research examining cyberbullying victimization and perpetration among primary school children, there is still very little research focused on understanding these behaviors among older populations, including postsecondary students (Faucher et al., 2014; Gibb & Devereux, 2014; Kowalski et al., 2012; Rivituso, 2014; Lutgen-Sandvik, 2008; Metsela, 2014; Rospenda et al., 2013; Samnani & Singh, 2012; Schenk & Fremouw, 2012; Sinkkonen et al., 2014). Given the potentially negative and sometimes fatal outcomes that result from cyberbullying victimization, this will be an important area of continued research. Specifically, understanding the motives behind why perpetrators target their victims and the mechanisms used to justify these behaviors will help expand our understanding regarding perpetrators motives, and will provide needed information to better understand how to support these individuals in order to reduce or eliminate their harmful behaviors.

The present study also found that, 74% of the study's sample reported being cyberbullied at least a few times a year or more. This definition is similar to Walker et al.'s (2011) definition of cyberbullying in that to be considered a victim of cyberbullying one only had to experience bullying behaviors at least a couple times a year. This may not be a stringent enough definition to meet the repetition requirement inherent in the more accepted definition of cyberbullying. This

may account for the higher number of reported incident of cyberbullying victimization among this sample as compared to prior studies that found a prevalence rate between 10-28% (Francisco, et al., 2015; Kraft & Wang, 2010; McDonald & Roberts-Pittman, 2010). On the other hand, it suggests that cyberbullying behaviors are more common now than even 5 years ago. As institutions of higher education integrate technologies across the curriculum, the impact that this might have on cyberbullying is of increasing importance because of the deleterious outcomes associated with its victimization. As mentioned in previous research examining cyberbullying among postsecondary students, future research needs to develop a specific definition and measure to examine traditional bullying victimization and cyberbullying victimization (Cook et al., 2010). This will allow for more accurate comparisons and understanding regarding the phenomenon of bullying and cyberbullying behaviors. Additionally, the time frame used to examine this phenomenon should be more consistent across research studies. Various age ranges have been used, some that include only traditional undergraduate students and others that include all postsecondary students, including graduate students. To better understand the differences and various factors associated with victimization and perpetration, it will be important to separate these groups in the future, especially since research has found that older students tend to engage less in bullying behaviors than younger students (Kraft & Wang, 2010; Zalaquett & Chatter, 2014). Not only may these behaviors manifest differently within these different age groups, but future prevention methods may also vary. In addition to age range, research to date uses different time frames when examining prevalence. For the current study, cyberbullying behaviors were examined since attending college, but other studies focus on the last 6 months to a year or even lifetime prevalence. The use of multiple time frames makes appropriate and accurate comparisons nearly impossible.

The current study found that the most commonly reported types of cyberbullying victimization as reported by victims included being cursed at, treated meanly, or having an embarrassing picture posted electronically where others could see it. These results are similar to previous studies that found that teasing, being insulted, having rumors spread, being made fun of, and being threatened were the most frequently reported types of cyberbullying victimization experienced online (Chen & Huang, 2015; Francisco et al., 2015). Future research should continue exploring the most common types of cyberbullying experienced by postsecondary students and examine if particular types affect students to differing degrees. As mentioned previously, there are eight distinct types of cyberbullying behaviors including: *denigration* (sending or posting gossip or rumors about a person), *flaming* (using inappropriate and aggressive language to fight online), *online harassment/cyberstalking* (repeatedly and intentionally sending malicious, threatening, or inappropriate messages to someone), i*mpersonation/masquerading* (pretending to be someone else to send or post harmful messages), *outing* (sharing someone's personal information or images online)*, trickery* (talking someone into sharing personal information and then sharing this information online), and *exclusion* (when a group or individual intentionally ignores or excludes someone from online activities) (Willard, 2007). Therefore, the most common types of cyberbullying reported by participants in the current study, fall within the online harassment/cyberstalking and denigration categories. However, perhaps flaming or being tricked would elicit higher levels of negative emotion and pressure to respond with negative internal or external delinquent behaviors. Without more research examining the various types of cyberbullying and they types of emotional responses and coping responses they elicit, it is hard to fully understand and prevent cyberbullying behaviors among postsecondary students.

Future work should continue to examine gender, ethnic/racial, and sexual orientation difference among postsecondary students who are victims of bullying and cyberbullying behaviors. Only a limited amount of research has examined gender's influence on rates of victimization and results remain inconclusive. Understanding gender differences is important and can have implication on the types of intervention and prevention methods utilized at the postsecondary level. This is particularly true because male and female victims tend to cope differently. Schenk and Fremouw (2012) found that male and female cyberbullying victims coped using a variety of methods including, telling someone, getting revenge, avoiding school events, and avoiding friends or peers. Furthermore, female victims reported avoiding the Internet or using their phone whereas males admitted to using more alcohol and illegal drugs to cope. In addition, although gender differences were not compared in the current study, results indicated that victims did cope with victimization by engaging in bullying and cyberbullying perpetration and self-harm. These negative ways of coping can negatively influence a student's ability to grow and succeed emotional, physically, and academically within the college setting. Therefore, it is important for college administrators and personnel to fully understand the impact bullying and cyberbullying has on postsecondary students and the types of coping mechanisms being utilized so that prevention methods can be better tailored to meet the needs of their students, particularly in regards to gender.

Sexual orientation has also been found to influences bullying and cyberbullying victimization among postsecondary students. Most research looking at sexual orientation and cyberbullying have found that identifying oneself as gay, lesbian, bisexual, or transgender increases the likelihood of being a victim of cyberbullying (Baldasare, Bauman, Goldman & Robie, 2012; Finn, 2004; MacDonald & Roberts-Pittman, 2010). Less is known in regards to

how race/ethnicity can influence rates of cyber-victimization. Although Zalaquett and Chatter (2014) found that Asian Americans were at least 4 times more likely to experience cyber-victimization than African American, Hispanic, or European American, other studies have found no significant racial/ethnic differences in rates of cyberbullying victimization (MacDonald & Roberts-Pittman, 2010). Having a better understanding of any gender, racial/ethnic, or sexual orientation differences will be important when developing and implementing various prevention efforts and when trying to identify students who may be at a higher risk of being victimized. University counseling centers may need to provide specific counseling approaches or services aimed at helping students who are victims of bullying or cyberbullying due to specific differences.

Future research should also focus on better understanding the consequences cyberbullying victimization has on the emotional, physical, and educational outcomes of postsecondary students. The current study found that cyberbullying victimization significantly and negatively affected students' levels of anxiety, depression, and stress. In addition, although suicidal thoughts and ideations were not assessed in the current study, given the increased levels of reported negative emotion by victims, suicidal behaviors may be an important area of research. Negative social exchanges during college have been associated with an increased risk of suicidal thoughts and behaviors (Hirsch & Barton, 2011). Suicide is currently the second leading cause of death among college aged students and the risk of suicide is higher among college students than students who do not attend college (Center for Disease Control, 2015). Therefore, the negative emotions associated with cyberbullying victimization warrant more attention, particularly for postsecondary students. Future work should expand on and take a

deeper look into these negative consequences as they can influence college adjustment and education attainment.

Additionally, more research should be dedicated to understanding protective factors that can help mitigate the negative effects of cyberbullying victimization. It will also be important to investigate bystander behaviors and how this role influences cyberbullying behaviors during postsecondary education. Understanding bystander behavior may also provide insights into how to develop effective prevention strategies for postsecondary students.

Finally, future research needs to apply and test theory related to cyberbullying among postsecondary students using theory. This study used general strain theory to examine the relationship between cyber-victimization, the negative emotional states of anxiety, depression, and stress, and the utilization of both internal and external negative coping mechanisms. Although general strain theory has been used to guide other work exploring cyber-victimization among postsecondary students (Rivituso, 2014), it has not been used to examine if negative emotional states, such as depression, anxiety, and stress lead to internalized and externalized delinquent behavior. Testing the applicability of theory is important in research as it informs research hypotheses and can help guide and make sense of the research findings, as well as guide prevention and support efforts. However, the mediation of negative emotions between cyberbullying victimization and negative coping mechanisms was not supported except for self-harming behaviors. This may, in part, be due to the relatively low rates of response and the number of participants who specifically reported cyberbullying victimization. Therefore, future research should test the applicability of general strain theory with a larger sample size to see if this merits a different outcome. It could also have to do with the types of negative emotional responses investigated. It may be more beneficial to look at other emotional responses such as

anger or embarrassment, which may more appropriately fit the level of emotion needed to create strain and a pressure to respond. Perhaps other theories may prove more useful and applicable to research examining cyberbullying victimization among postsecondary student. Therefore, future studies should continue exploring different theories in order to better understand the underlining mechanisms that mediate cyberbullying victimization and negative coping mechanisms.

Conclusion

Bullying and cyberbullying victimization were reported by postsecondary students in the current study. Being a victim of cyberbullying perpetration was associated with a variety of negative emotional responses, including anxiety, depression, and stress. In addition, cyberbullying victims reported higher levels of engaging in traditional and cyberbullying perpetration, as well as, engaging in self-harm, compared to students who did not report being a victim of cyberbullying victimization since attending college. This study was guided by general strain theory and posited that the negative emotional states of anxi8ety, stress, and depression, would mediate the relationships between cyberbullying victimization and bullying and cyberbullying perpetration, and self-harm and self-cyberbullying. However, this hypothesis was not supported in most instances. Specifically, anxiety, depression, and stress independently failed to mediate the relationship between traditional bullying perpetration, cyberbullying perpetration, and self-cyberbullying. Though, when not controlling for the other mediators, the combined effect of all three negative emotional states did appear to have an effect on the relationship between cyberbullying victimization and the negative online and offline consequences examined in this study. Furthermore, partial support was found for the mediating effect of stress on cyberbullying victimization and self-harming behaviors. However, given the small and heterogeneous sample, use of self-report measures, and the cross-sectional nature of the study,

results should be interpreted with caution. Various implications for these findings were also explored and suggestions for future research were given. While the findings from this study provide important insight related to cyberbullying and young adults and helps fill current gaps within the literature related to cyberbullying victimization among postgraduate students, more research is needed.

APPENDIX

Appendix

Cyberbullying on Postsecondary Campus Survey

Estimate how much time during the day you are on your computer.

- ❍ 0-9 minutes
- ❍ 10-20 minutes
- ❍ 21-30 minutes
- ❍ 31-40 minutes
- ❍ 41-59 Minutes
- ❍ 1-3 hours
- ❍ 4-6 Hours
- ❍ 7-9 hours
- ❍ 10-12 hours
- ❍ over 12 hours

How often do you check your personal e-mail and social networking sites (e.g., Facebook, Twitter, Instagram)?

- ❍ Never
- ❍ 1-2 times a week
- ❍ 3 or more times a week
- ❍ Daily (at least 1 time a day)
- ❍ Several times a day

How much time do you spend on social media every day?

- ❍ 0-9 minutes
- ❍ 10-20 minutes
- ❍ 21-30 minutes
- ❍ 31-40 minutes
- ❍ 41-59 Minutes
- ❍ 1-3 hours
- ❍ 4-6 Hours
- ❍ 7-9 hours
- ❍ 10-12 hours
- ❍ over 12 hours

Do you own a cell phone?

- ❍ Yes
- ❍ No

If you answered yes to the above question, is your phone a smart phone?

- ❍ Yes
- ❍ No
- ❍ I don't own a cell phone

How would you describe your overall proficiency using computers?

- ❍ Novice
- ❍ Intermediate
- ❍ Advanced
- ❍ Highly Skilled

To which social communities are you currently registered? (Check all that apply)

- ❑ Facebook
- ❑ LinkedIn
- ❑ Myspace
- ❑ Bebo
- ❑ Friendster
- ❑ Hi5
- ❑ Kik
- ❑ Grindr
- ❑ Xanga
- ❑ Vine
- ❑ Instagram
- ❑ Twitter
- ❑ Youtube
- ❑ Snapchat
- ❑ Reddit
- ❑ Imgur
- ❑ Tumblr
- ❑ Whisper
- ❑ Yik Yak
- ❑ Other (Please Specify) _____

Read each statement carefully. Indicate how you feel about each statement.

	Strongly Disagree				Strongly Agree
There is a special person who is around when I am in need.	❍	❍	❍	❍	❍
There is a special person with whom I can share joys and sorrows.	❍	❍	❍	❍	❍
My family really tries to help me.	❍	❍	❍	❍	❍
I get the emotional help & support I need from my family.	❍	❍	❍	❍	❍
I have a special person who is a real source of comfort to me.	❍	❍	❍	❍	❍
My friends really try to help me.	❍	❍	❍	❍	❍
I can count on my friends when things go wrong.	❍	❍	❍	❍	❍
I can talk	❍	❍	❍	❍	❍

about my problems with my family.					
I have friends with whom I can share my joys and sorrows.	❍	❍	❍	❍	❍
There is a special person in my life who cares about my feelings.	❍	❍	❍	❍	❍
My family is willing to help me make decisions.	❍	❍	❍	❍	❍
I can talk about my problems with my friends.	❍	❍	❍	❍	❍

Please read each statement and indicate how much the statement applied to you over the past week. There is no right or wrong answers. Do not spend too much time on any statement.

	Never	Sometimes	Often	Almost Always
I found it hard to wind down.	❍	❍	❍	❍
I experienced dry mouth.	❍	❍	❍	❍
I had trouble experiencing positive feelings.	❍	❍	❍	❍
I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion).	❍	❍	❍	❍
I found it difficult to work up the initiative to do things.	❍	❍	❍	❍
I tended to over-react to situations.	❍	❍	❍	❍
I experienced trembling (e.g. in the hands).	❍	❍	❍	❍
I felt that I was using a lot of nervous energy.	❍	❍	❍	❍
I was worried about situations in which I might panic and make a fool of myself.	❍	❍	❍	❍
	❍	❍	❍	❍

I felt that I had nothing to look forward to.	❍	❍	❍	❍
I found myself getting agitated.	❍	❍	❍	❍
I found it difficult to relax.	❍	❍	❍	❍
I felt down-hearted and blue.	❍	❍	❍	❍
I was intolerant of anything that kept me from getting on with what I was doing.	❍	❍	❍	❍
I felt I was close to panic.	❍	❍	❍	❍
I was unable to become enthusiastic about anything.	❍	❍	❍	❍
I felt I wasn't worth much as a person.	❍	❍	❍	❍
I felt that I was rather touchy.	❍	❍	❍	❍
I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat).	❍	❍	❍	❍
I felt scared without any	❍	❍	❍	❍

good reason. I felt that life was meaningless.	❍	❍	❍	❍

Bullying is defined as unwanted, aggressive behaviors that involve a real or perceived power imbalance and is repeated over time. Bullying can include teasing, name calling, inappropriate sexual comments, threats, being left out of activities or ignored on purpose, spreading rumors about someone, or hitting, kicking, or tripping someone on purpose.

Given the above definition, since attending postsecondary, have you experienced any of the following? (Check all that apply)

- ❑ Been called mean, inappropriate, or offensive names by another student
- ❑ Been teased/taunted by another student
- ❑ Had another student make sexually inappropriate comments to you
- ❑ Been left out of activities or ignored by a peer group on purpose
- ❑ Had another student spread rumors about you
- ❑ Been hit, kicked, or tripped by another student
- ❑ Been threatened or blackmailed by another student
- ❑ Been physically assaulted by another student
- ❑ I have not experienced any of these behaviors since attending postsecondary

If I have not experienced any ... Is Selected, Then Skip To Bullying is defined as unwanted, aggr...

When you experienced being bullied, where did this/these event(s) occur? (Check all that apply)

- ❑ In the classroom
- ❑ In the cafeteria/dining hall
- ❑ While walking on campus
- ❑ While attending an event on campus
- ❑ While engaged in a collegiate sport/club
- ❑ In the bathroom
- ❑ In the dorms/on-campus housing
- ❑ Off-campus housing with other students attending the same postsecondary
- ❑ Off-campus (Please specify) _____
- ❑ Other (Please describe) _____

Why do you think you were targeted? (Check all that apply)

- ❑ Because of my looks (physical appearance/clothes/piercings or tattoos)
- ❑ Because of my weight
- ❑ Because they think I am weird/different
- ❑ Because I have a disability
- ❑ Because I get good grades
- ❑ Because I struggle in school
- ❑ Because I use disability services for my classes
- ❑ Because of my race/ethnicity
- ❑ Because of the country I'm from
- ❑ Because I lack finances
- ❑ Because of my sexual orientation
- ❑ Because of personal conflict with that person
- ❑ Unsure
- ❑ Other (Please Describe) _____

Bullying is defined as unwanted, aggressive behaviors that involve a real or perceived power imbalance and is repeated over time. Bullying can include teasing, name calling, inappropriate sexual comments, threats, being left out of activities or ignored on purpose, spreading rumors about someone, or hitting, kicking, or tripping someone on purpose.

Given the above definition, since attending postsecondary, have you been involved in any of the following activities? (Check all that apply)

- ❑ Said mean, inappropriate things, or called another student offensive names
- ❑ Teased/taunted another student
- ❑ Made sexually inappropriate comments to another student
- ❑ Purposely left out another student from peer activities or ignored them
- ❑ Spread rumors about another student
- ❑ Hit, kicked, or tripped another student
- ❑ Threatened or blackmailed another student
- ❑ Physically assaulted another student
- ❑ I have not engaged in any of these behaviors since attending postsecondary

If I have not engaged in any o... Is Selected, Then Skip To End of Block

When you engaged in negative behaviors with other students, where did this/these event(s) occur? (Check all that apply)

- ❑ In the classroom
- ❑ In the cafeteria/dining hall
- ❑ While walking on campus
- ❑ While attending an event on campus
- ❑ While engaged in a collegiate sport/club
- ❑ In the bathroom
- ❑ In the dorms/on-campus housing
- ❑ Off-campus housing with other MSU students
- ❑ Off-campus (Please specify) _____
- ❑ Other (Please describe) _____

Why did you choose to say or do those thing to another students? (Check all that apply)

- ❑ Because of their looks (physical appearance/clothes/piercings or tattoos)
- ❑ Because of their weight
- ❑ Because they were weird/different
- ❑ Because they have a disability
- ❑ Because they got better grades than me
- ❑ Because they struggled in class
- ❑ Because they used disability serves
- ❑ Because of their race/ethnicity
- ❑ Because of their country of origin
- ❑ Because of their lack of finances
- ❑ Because of their Sexual orientation
- ❑ Because of personal conflict with them
- ❑ Other (Please Describe) _____

Answer the following questions and indicate how often you have experienced each since attending postsecondary.

	Never	Less than a few times a year	A few times a year	1-2 times a month	1-2 times a week	Every day/almost every day
Has someone pretended to be someone else while talking to you electronically?	❍	❍	❍	❍	❍	❍
Has someone shared personal information with person faking identity	❍	❍	❍	❍	❍	❍
Have you received a pornographic picture that you did not want from someone electronically that was not spam?	❍	❍	❍	❍	❍	❍
Has someone changed a picture of you in a negative way and posted it electronically?	❍	❍	❍	❍	❍	❍
Have you received an offensive picture electronically that was not spam?	❍	❍	❍	❍	❍	❍

Has someone lied about themselves to you electronically?	❍	❍	❍	❍	❍	❍
Has someone logged into your electronic account and changed your information?	❍	❍	❍	❍	❍	❍
Have you received an unwanted sexual message from someone electronically?	❍	❍	❍	❍	❍	❍
Have you received a nude or partially nude picture that you did not want from someone you were talking to electronically?	❍	❍	❍	❍	❍	❍
Has someone posted a nude picture of you electronically?	❍	❍	❍	❍	❍	❍
Has someone teased you electronically?	❍	❍	❍	❍	❍	❍
Has someone been mean to	❍	❍	❍	❍	❍	❍

you electronically?						
Has someone called you mean names electronically?	❍	❍	❍	❍	❍	❍
Has someone distributed information electronically while pretending to be you?	❍	❍	❍	❍	❍	❍
Have you completed an electronic survey that was supposed to remain private but the answers were sent to someone else?	❍	❍	❍	❍	❍	❍
Has someone written mean messages about you publicly electronically?	❍	❍	❍	❍	❍	❍
Has someone posted an embarrassing picture of you electronically where other people could see it?	❍	❍	❍	❍	❍	❍
Has someone printed out an electronic	❍	❍	❍	❍	❍	❍

conversation you had and then showed it to others?						
Has someone made fun of you electronically?	❍	❍	❍	❍	❍	❍
Has someone cursed at you electronically?	❍	❍	❍	❍	❍	❍
Has someone logged into your electronic account and pretended to be you?	❍	❍	❍	❍	❍	❍

Answer the following questions and indicate how often you have experienced each since attending postsecondary.

	Never	Less than a few times a year	A few times a year	1-2 times a month	1-2 times a week	Every day/almost every day
Have you pretended to be someone else while talking to someone electronically?	❍	❍	❍	❍	❍	❍
Has someone shared personal information with you electronically when you pretended to be someone else?	❍	❍	❍	❍	❍	❍
Have you lied about yourself to someone electronically?	❍	❍	❍	❍	❍	❍
Have you sent a rude message to someone electronically?	❍	❍	❍	❍	❍	❍
Have you sent an unwanted nude or partially nude picture to someone electronically?	❍	❍	❍	❍	❍	❍
Have you teased	❍	❍	❍	❍	❍	❍

someone electronically?						
Have you been mean to someone electronically?	❍	❍	❍	❍	❍	❍
Have you called someone mean names electronically?	❍	❍	❍	❍	❍	❍
Have you tried to get information from someone you talked to electronically that they did not want to give?	❍	❍	❍	❍	❍	❍
Have you posted an embarrassing picture of someone electronically where other people could see it?	❍	❍	❍	❍	❍	❍
Have you posted a picture of someone electronically that they did not want others to see?	❍	❍	❍	❍	❍	❍
Have you made fun of someone	❍	❍	❍	❍	❍	❍

electronically? Have you cursed at someone electronically?	❍	❍	❍	❍	❍	❍

Have you ever engaged in any type of self-harming behavior (e.g., cutting, burning, picking, carving, banging or hitting self, swallowing poison...)?

❍ Yes

❍ No

If Yes Is Selected, Then Skip To Please estimate the number of times i...If No Is Selected, Then Skip To Have you ever posted online or used o...

Please estimate the number of times in the last year you have intentionally (i.e., on purpose) performed each type of non-suicidal self-harm (e.g., 0, 10, 100, 500):

**Be sure to click on all sliding scales even if the answer is zero so that your answers are recorded.

_____ Cutting
_____ Severe Scratching
_____ Biting
_____ Banging or Hitting Self
_____ Burning
_____ Interfering w/ Wound Healing (e.g., picking scabs)
_____ Carving
_____ Rubbing Skin against Rough Surface
_____ Pinching
_____ Sticking Self w/ Needles
_____ Pulling Hair
_____ Swallowing Dangerous Substances
_____ Other

Of the different means of self-harm, which of the following-if any-do you consider your main form of self-harm?

❍ I do not/or have not engaged in self-harming behaviors within the last year
❍ Cutting
❍ Severe Scratching
❍ Biting
❍ Banging or Hitting self
❍ Burning
❍ Interfering w/ Wound Healing (e.g., picking scabs)
❍ Carving
❍ Rubbing Skin Against Rough Surface
❍ Pinching
❍ Sticking Self w/ Needles
❍ Pulling Hair
❍ Swallowing Dangerous Substances
❍ Other

At what age did you first harm yourself?

❍ 1
❍ 2
❍ 3
❍ 4

- ❍ 5
- ❍ 6
- ❍ 7
- ❍ 8
- ❍ 9
- ❍ 10
- ❍ 11
- ❍ 12
- ❍ 13
- ❍ 14
- ❍ 15
- ❍ 16
- ❍ 17
- ❍ 18
- ❍ 19
- ❍ 20
- ❍ 21
- ❍ 22
- ❍ 23
- ❍ 24
- ❍ 25

Have you harmed yourself since attending postsecondary?

- ❍ Yes
- ❍ No

Typically, how much time elapses from the time you have the urge to self-harm until you act on the urge?

- ❍ Less than 1 hour
- ❍ 1 - 3 hours
- ❍ 4 - 7 hours
- ❍ 8 - 11 hours
- ❍ 12 - 15 hours
- ❍ 16-19 hours
- ❍ 20-23 hours
- ❍ 24 or more hours

Below is a list of statements that may or may not be relevant to your experience of self-harm. Please identify the statements that are most relevant for you. When I self-harm, I am...

	Not at all like me						Just like me
calming myself down	❍	❍	❍	❍	❍	❍	❍
creating a boundary between myself and others	❍	❍	❍	❍	❍	❍	❍
punishing myself	❍	❍	❍	❍	❍	❍	❍
giving myself a way to care for myself (by attending to the wound)	❍	❍	❍	❍	❍	❍	❍
causing pain so I will stop feeling numb	❍	❍	❍	❍	❍	❍	❍
avoiding the impulse to attempt suicide	❍	❍	❍	❍	❍	❍	❍
doing something to generate excitement or exhilaration	❍	❍	❍	❍	❍	❍	❍
bonding with peers	❍	❍	❍	❍	❍	❍	❍
letting others know the extent of my emotional pain	❍	❍	❍	❍	❍	❍	❍
seeing if I can stand the pain	❍	❍	❍	❍	❍	❍	❍
creating a physical sign that I feel awful	❍	❍	❍	❍	❍	❍	❍
getting back at someone	❍	❍	❍	❍	❍	❍	❍
ensuring that I am self-sufficient	❍	❍	❍	❍	❍	❍	❍
releasing emotional pressure that has built up inside of me	❍	❍	❍	❍	❍	❍	❍

demonstrating that I am separate from other people	❍	❍	❍	❍	❍	❍	❍
expressing anger towards myself for being worthless or stupid	❍	❍	❍	❍	❍	❍	❍
creating a physical injury that is easier to care for than my emotional distress	❍	❍	❍	❍	❍	❍	❍
trying to feel something (as opposed to nothing) even if it is physical pain	❍	❍	❍	❍	❍	❍	❍
responding to suicidal thoughts without actually attempting suicide	❍	❍	❍	❍	❍	❍	❍
entertaining myself or others by doing something extreme	❍	❍	❍	❍	❍	❍	❍
fitting in with others	❍	❍	❍	❍	❍	❍	❍
seeking care or help from others	❍	❍	❍	❍	❍	❍	❍
demonstrating I am tough or strong	❍	❍	❍	❍	❍	❍	❍
proving to myself that my emotional pain is real	❍	❍	❍	❍	❍	❍	❍
getting revenge against others	❍	❍	❍	❍	❍	❍	❍
demonstrating that I do not need to rely on others for help	❍	❍	❍	❍	❍	❍	❍
reducing anxiety, frustration, anger, or other overwhelming emotions	❍	❍	❍	❍	❍	❍	❍

establishing a barrier between myself and others	❍	❍	❍	❍	❍	❍	❍
reacting to feeling unhappy with myself or disgusted with myself	❍	❍	❍	❍	❍	❍	❍
allowing myself to focus on treating the injury, which can be gratifying or satisfying	❍	❍	❍	❍	❍	❍	❍
making sure I am still alive when I don't feel real	❍	❍	❍	❍	❍	❍	❍
putting a stop to suicidal thoughts	❍	❍	❍	❍	❍	❍	❍
pushing my limits in a manner akin to skydiving or other extreme activities	❍	❍	❍	❍	❍	❍	❍
creating a sign of friendship or kinship with friends or loved ones	❍	❍	❍	❍	❍	❍	❍
keeping a loved one from leaving or abandoning me	❍	❍	❍	❍	❍	❍	❍
proving I can take the physical pain	❍	❍	❍	❍	❍	❍	❍
signifying the emotional distress I'm experiencing	❍	❍	❍	❍	❍	❍	❍
trying to hurt someone close to me	❍	❍	❍	❍	❍	❍	❍
establishing that I am autonomous/independent	❍	❍	❍	❍	❍	❍	❍

The following questions are related to a phenomenon known as "self-cyberbullying." Similar to self-harm, people engage in hurtful behaviors towards themselves but do so using technology to post mean, cruel or aggressive statements against themselves (Example: posting on Facebook under a photo of yourself "you are a loser, get a life") or to themselves (Example: sending yourself a text message saying "you are disgusting").

Have you ever posted online or used other technology to write a mean, cruel or aggressive post against yourself or to yourself?

- ❍ Yes
- ❍ No

Have you used technology to write a mean, cruel or aggressive post against yourself or to yourself since attending postsecondary?

- ❍ Yes
- ❍ No

If No Is Selected, Then Skip To End of Block

Was it posted or sent anonymously (others did not know it was you who posted or sent something against yourself)?

- ❍ Yes
- ❍ No

What media platform did this behavior occur on?

- ❍ Facebook
- ❍ Linkedin
- ❍ Myspace
- ❍ Bebo
- ❍ Friendster
- ❍ Hi5
- ❍ Xanga
- ❍ Vine
- ❍ Reddit
- ❍ Tumblr
- ❍ Imgur
- ❍ YouTube
- ❍ Instagram
- ❍ Twitter
- ❍ Snapchat
- ❍ Yik Yak
- ❍ Whisper
- ❍ Kik
- ❍ Grindr
- ❍ Text Messaging
- ❍ E-mail
- ❍ Other (Please specify) _____

This inventory was written to help us better understand the experience of intentionally posting online or using other technology to write a mean, cruel or aggressive post against yourself. Please identify the statements that are most relevant for you: When I engage in this behavior, I am…

	Not at all like me				Just like me
calming myself down	❍	❍	❍	❍	❍
creating a boundary between myself and others	❍	❍	❍	❍	❍
punishing myself	❍	❍	❍	❍	❍
giving myself a way to care for myself (by attending to my hurt feeling or later defending myself online)	❍	❍	❍	❍	❍
causing emotional pain so I will stop feeling numb	❍	❍	❍	❍	❍
avoiding the impulse to attempt suicide	❍	❍	❍	❍	❍
doing something to generate excitement or exhilaration	❍	❍	❍	❍	❍
bonding with peers	❍	❍	❍	❍	❍
letting others know the extent of my emotional pain	❍	❍	❍	❍	❍
seeing if I can stand the pain and response posts from others	❍	❍	❍	❍	❍
creating a physical sign that I feel awful	❍	❍	❍	❍	❍
getting back at someone	❍	❍	❍	❍	❍

or trying to make someone feel guilty					
ensuring that I am self-sufficient	❍	❍	❍	❍	❍
releasing emotional pressure that has built up inside of me	❍	❍	❍	❍	❍
demonstrating that I am separate from other people	❍	❍	❍	❍	❍
expressing anger towards myself for being worthless or stupid	❍	❍	❍	❍	❍
creating a post or message that is easier to respond to than my emotional distress	❍	❍	❍	❍	❍
trying to feel something (as opposed to nothing) even if it is emotional pain	❍	❍	❍	❍	❍
responding to suicidal thoughts without actually attempting suicide	❍	❍	❍	❍	❍
entertaining myself or others	❍	❍	❍	❍	❍
fitting in with others	❍	❍	❍	❍	❍
seeking care or help from others	❍	❍	❍	❍	❍
demonstrating I am tough or strong	❍	❍	❍	❍	❍
proving to myself that my emotional pain is real	❍	❍	❍	❍	❍
	❍	❍	❍	❍	❍

getting revenge against others					
demonstrating that I do not need to rely on others for help	❍	❍	❍	❍	❍
reducing anxiety, frustration, anger, or other overwhelming emotions	❍	❍	❍	❍	❍
establishing a barrier between myself and others	❍	❍	❍	❍	❍
reacting to feeling unhappy with myself or disgusted with myself	❍	❍	❍	❍	❍
allowing myself to respond to mean posts, which can be gratifying or satisfying	❍	❍	❍	❍	❍
putting a stop to suicidal thoughts	❍	❍	❍	❍	❍
keeping a loved one from leaving or abandoning me	❍	❍	❍	❍	❍
signifying the emotional distress I'm experiencing	❍	❍	❍	❍	❍
trying to hurt someone close to me	❍	❍	❍	❍	❍
establishing that I am autonomous/independent	❍	❍	❍	❍	❍
trying to get a sense of what other people think about me	❍	❍	❍	❍	❍
	❍	❍	❍	❍	❍

trying to prove to myself I am worthless or deserve to feel worthless					

Are there other feelings you experience or reasons you engage in writing mean, cruel, or aggressive posts against yourself?

Is there anything else we should know about your engagement in writing mean, cruel, or aggressive posts against yourself?

What is your birth year?

- ❍ 1990
- ❍ 1991
- ❍ 1992
- ❍ 1993
- ❍ 1994
- ❍ 1995
- ❍ 1996
- ❍ 1997

What is your Gender?

- ❍ Male
- ❍ Female
- ❍ Transgender Female
- ❍ Transgender Male
- ❍ Other _____

How do you describe your sexual orientation?

- ❍ Heterosexual
- ❍ Gay
- ❍ Lesbian
- ❍ Asexual
- ❍ Bisexual
- ❍ Queer
- ❍ Other (Please Specify) _____

Which of the following best describes your marital status?

- ❍ Single, never married
- ❍ Married
- ❍ Separated
- ❍ Divorced
- ❍ Widowed

With what ethnic group do you most closely identify?

- ❍ American Indian or Alaskan Native
- ❍ Asian
- ❍ Black or African American
- ❍ Hispanic or Latino
- ❍ White/Caucasian
- ❍ Native Hawaiian or other Pacific Islander
- ❍ Other _____

What is your current major?

- ❍ Accounting
- ❍ Actuarial Science
- ❍ Advertising
- ❍ Agribusiness Management
- ❍ Agriculture and Natural Resources
- ❍ Agriculture, Food and Natural Resources Education
- ❍ Animal Science
- ❍ Anthropology (BA)
- ❍ Anthropology (BS)
- ❍ Apparel and Textile Design (BFA)
- ❍ Apparel and Textiles (BA)
- ❍ Applied Engineering Sciences
- ❍ Arabic
- ❍ Art Education
- ❍ Art History and Visual Culture
- ❍ Arts & Letters-General
- ❍ Arts and Humanities
- ❍ Astrophysics
- ❍ Athletic Training
- ❍ Biochemistry and Molecular Biology
- ❍ Biochemistry and Molecular Biology/Biotechnology

- ❍ Biological Science Interdepartmental
- ❍ Biomedical Laboratory Science
- ❍ Biosystems Engineering
- ❍ Chemical Engineering
- ❍ Chemical Physics
- ❍ Chemistry (BA)
- ❍ Chemistry (BS)
- ❍ Child Development (BA)
- ❍ Chinese
- ❍ Civil Engineering
- ❍ Clinical Laboratory Sciences
- ❍ Use Biomedical Laboratory
- ❍ Science major
- ❍ code which is 7100.
- ❍ Communication
- ❍ Comparative Cultures and Politics
- ❍ Composition
- ❍ Computational Mathematics (BS)
- ❍ Computational Mathematics (BA)
- ❍ Computer Engineering
- ❍ Computer Science
- ❍ Construction Management
- ❍ Criminal Justice
- ❍ Crop and Soil Sciences
- ❍ Dietetics
- ❍ Early Care and Education
- ❍ Earth Science Interdepartmental
- ❍ Economics (BA)
- ❍ Economics (BS)
- ❍ Education (Elementary)
- ❍ Electrical Engineering
- ❍ Engineering-No Major
- ❍ English
- ❍ Entomology
- ❍ Environmental Biology/Microbiology
- ❍ Environmental Biology/Plant Biol
- ❍ Environmental Biology/Zoology
- ❍ Environmental Economics and Management
- ❍ Environmental Engineering
- ❍ Environmental Geography

- ❍ Environmental Geosciences
- ❍ Environmental Studies and Sustainability
- ❍ Experience Architecture
- ❍ Film Studies
- ❍ Finance
- ❍ Fisheries and Wildlife
- ❍ Food Industry Management
- ❍ Food Science
- ❍ Forestry
- ❍ French
- ❍ Genomics & Molecular Genetics
- ❍ Geographic Information Science
- ❍ Geological Sciences
- ❍ German
- ❍ Global & Area Studies - Soc Sci (BA)
- ❍ Global & Area Studies - Soc Sci (BS)
- ❍ Global Studies in the Arts and Humanities
- ❍ History
- ❍ History Education (BA)
- ❍ Horticulture
- ❍ Hospitality Business
- ❍ Human Biology
- ❍ Human Development and Family Studies (BA)
- ❍ Human Development and Family Studies (BS)
- ❍ Human Geography
- ❍ Human Resource Management
- ❍ Humanities-Prelaw
- ❍ Interdisciplinary Humanities
- ❍ Interdisciplinary Studies in Social Science (BA)
- ❍ Interdisciplinary Studies in Social Science (BS)
- ❍ Interdisciplinary Studies in Social Science - Social Science Education (BA)
- ❍ Interior Design
- ❍ International Relations
- ❍ James Madison Postsecondary
- ❍ Japanese
- ❍ Jazz Studies
- ❍ Journalism
- ❍ Kinesiology
- ❍ Landscape Architecture
- ❍ Linguistics

- ❍ Lyman Briggs
- ❍ Management
- ❍ Marketing
- ❍ Materials Science and Engineering
- ❍ Mathematics (BA)
- ❍ Mathematics (BS)
- ❍ Mathematics, Advanced (BA)
- ❍ Mathematics, Advanced (BS)
- ❍ Mechanical Engineering
- ❍ Media and Information (BA)
- ❍ Media and Information (BS)
- ❍ Microbiology
- ❍ Music
- ❍ Music Education
- ❍ Music Performance
- ❍ Natural Science-No Major
- ❍ Neuroscience (BS)
- ❍ No Preference
- ❍ Nursing
- ❍ Nursing (Online Program) - RN license required
- ❍ Nursing - Accelerated Second Degree Program
- ❍ This major is available only
- ❍ for summer semesters.
- ❍ Nutritional Sciences
- ❍ Packaging
- ❍ Philosophy
- ❍ Physical Science Interdepartmental
- ❍ Physics (BA)
- ❍ Physics (BS)
- ❍ Physiology
- ❍ Plant Biology
- ❍ Political Science (BA)
- ❍ Political Science-Prelaw
- ❍ Political Theory and Constitutional Democracy
- ❍ Predental
- ❍ Premedical
- ❍ Prenursing
- ❍ Preoptometry
- ❍ Preveterinary
- ❍ Professional Writing

- ❍ Psychology (BA)
- ❍ Psychology (BS)
- ❍ Public Policy (BA)
- ❍ Religious Studies
- ❍ Russian
- ❍ Social Relations and Policy
- ❍ Social Work
- ❍ Sociology (BA)
- ❍ Sociology (BS)
- ❍ Spanish (BA)
- ❍ Special Education-Learning Disabilities
- ❍ Statistics (BA)
- ❍ Statistics (BS)
- ❍ Studio Art (BA)
- ❍ Studio Art (BFA)
- ❍ Supply Chain Management
- ❍ Sustainable Parks, Recreation and Tourism
- ❍ Theatre (BA)
- ❍ Theatre (BFA)
- ❍ Urban and Regional Planning
- ❍ Veterinary Technology
- ❍ Women's and Gender Studies
- ❍ World Politics (BA)
- ❍ Zoology (BA)
- ❍ Zoology (BS)

What is your current class status?

- ❍ Freshman
- ❍ Sophmore
- ❍ Junior
- ❍ Senior
- ❍ Other (Please Specify) _____

Estimate your current grade point average (GPA)?

- ❍ 0.0 - 1.0
- ❍ 1.5 - 2.0
- ❍ 2.5 - 3.0
- ❍ 3.5 - 4.0

Are you involved in any of the following on campus? (Check all that apply)

- ❑ International student
- ❑ Sorority
- ❑ Fraternity
- ❑ Varsity athletic team member
- ❑ Athletic team member (not varsity)
- ❑ Student government
- ❑ Campus approved club/group (including sports)
- ❑ Other (Please Describe) _____
- ❑ I am not involved in any campus activities

Which of the following best describes your current living situation while attending postsecondary?

- ❍ House
- ❍ Apartment
- ❍ Residence Hall
- ❍ Fraternity/Sorority chapter residence
- ❍ Co-op
- ❍ Other (Please specify) _____

Who do you currently live with while attending postsecondary?

- ❍ Postsecondary assigned roommate(s)
- ❍ Friend(s)
- ❍ Alone
- ❍ Sibling(s)
- ❍ Partner/Spouse
- ❍ Parent/Guardian

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