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CYBERBULLYING: EXPLORATION OF IMPACT OF LONELINESS AND PRIOR
EXPERIENCE ON PSYCHOLOGICAL DISTRESS

A Thesis

Presented in partial fulfillment of requirements

For the degree of Master of Arts

In the Department of Psychology

The University of Mississippi

By

AMY BEEL

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ABSTRACT

This study explored the potential role of loneliness as a mediator in the relationship between cyberbullying victimization and perpetration and psychological distress in a sample of college-age students. It was also hypothesized that prior history of traditional bullying involvement in childhood would moderate the impact of loneliness as a mediator of the relationship between cyberbullying and loneliness. University of Mississippi students (N = 372), primarily females of European descent participated in an online survey. Participants completed measures assessing loneliness, cyberbullying involvement, psychological distress, and past traditional bullying involvement. Few participants reported a history of traditional bullying. As such, a mediation analysis was conducted to assess the relationship between loneliness, cyberbullying involvement, and psychological distress. Results showed that loneliness did not mediate the relationship between cyberbullying involvement and psychological distress. Implications of the study are discussed.

DEDICATION

This thesis is dedicated to my family and my fiancé, Phillip. Thank you especially to my mother, my best friend, who continues to push me to chase my dreams. Dad, thank you for being the support I need. Phillip, thank you for brightening my days.

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1. INTRODUCTION

Traditional bullying is defined as aggressive behavior intended to be harmful to a targeted individual or group (Dooley et. al., 2009). Most bullying research has focused on populations of children and adolescents. Twenty-seven percent of children in secondary and post-secondary school report being a victim of some type of bullying (Craig et al, 2009). Further, each year nearly 16,000 children report missing school because of fear of experiencing bullying (National Education Association, 2011).

Bullying victimization during childhood has been linked to various forms of psychological distress including anxiety, depression, and low self-esteem (Craig, 1998; Fekkes, Pijpers, & Verloove-Vanhorick, 2004; Juvonen, Graham, & Schuster, 2003; Kowalski & Limber, 2013). These psychological effects can be long lasting extending into early adulthood (Van Oort, Greaves-Lord, Ormel, Verhulst, & Huizink, 2011). It has been determined that if not treated the adverse effects of bullying may become life-long issues (Lereya, Copeland, Costello & Wolke, 2015).

Research on bullying has recently shifted focus to cyberbullying. Cyberbullying is defined as an aggressive act carried out over electronic means repeatedly against a target individual or group that cannot easily defend themselves (Smith et. al., 2008).

While cyberbullying shares similarities with traditional bullying, it has been demonstrated to be a separate construct (Bonnano & Hymel, 2013; Dempsey, Sulkowski, Nichols, & Storch, 2009; Stewart, Drescher, Maack, Ebesutani, & Young, 2014). It is estimated that the prevalence rate of cyberbullying among children and adolescents in the United States is approximately 23% (Hamm et. al. 2015). Cyberbullying has also been linked to negative psychological outcomes including depression, anxiety, and loneliness (Kowaski, Giumetti, Schroeder, & Lattanner, 2014).

Cyberbullying has been shown to occur in college students. Prevalence rates among college students vary depending on method of measurement. Self-report measures show victimization rates from 9% to 38% (Kowalski et. al. 2014; Kowalski & Limber, 2013; MacDonald & Roberts-Pittman, 2010; Schenk & Fremouw, 2012; Walker et. al., 2011). Studies suggest perpetration rates ranging from 8.6% -22.5% (Aricak, 2009; Dilmac, 2009; MacDonald & Roberts-Pittman, 2010). Moreover, cyberbullying in adults also shows a relationship with negative psychological outcomes including depression, anxiety, and suicidal ideation (Francisco, Simao, Ferreria, & Martins, 2014; Selkie, Kota, Chan, & Moreno, 2015).

Research also suggests a relationship between loneliness and peer bullying victimization in children and adolescents. For example, Sahin (2012) found that loneliness was correlated with an increased report of being a cyberbully victim in adolescence. Baker and Bugay (2011) noted that loneliness mediates the relationship between bullying and depression. Several other studies have also suggested that loneliness mediates the relationship between bullying and adverse

psychological sequelae (Berguno, Leroux, McAinsh, & Shaikh 2004; Coplan, Closson, & Arbeau 2007; Jobe-Shields, Cohen, & Parra, 2011; Kochenderfer-Ladd & Wardrop, 2001).

It has been suggested that cyberbullying is a form of bullying that takes place in a different context than that found with traditional bullying (Li, 2006). Researchers suggest that kids grow out of bullying, but with increased use of the internet and subsequent rise in cyberbullying for all ages not just those in middle and high school, bullying behaviors might be shifted to an internet focus. Grading, Strohmeier, and Spiel (2009) suggested that co-occurrence of bullying and traditional bullying during adolescence may mean that rather than aging out of bullying, aggressors may go on to become cyberbullies in early adulthood.

The purpose of the current study is to examine relationships among traditional childhood bullying, cyberbullying, loneliness, and psychological outcomes among college students. Following discussion of bullying and cyberbullying, the psychological impact of being a bully, victim, and bully-victim will be reviewed. The role of loneliness as a potential mediator of the relationship between bullying and psychological wellbeing will be examined. Moreover, the role of a history of traditional bullying involvement on cyber bullying in young adulthood will also be discussed.

Traditional bullying in children and adolescents

Traditional bullying is commonly defined as a repeated, aggressive, and intentional act carried out by a group or individual towards a victim that cannot easily defend him or herself (Olweus, 1993). Bullying behaviors can be verbal (threatening, teasing, degrading) or nonverbal (hitting, kicking, rude gestures) (Olweus, 1993). Behaviors are also classified as indirect (spreading rumors, social exclusion, social rejection) or direct (overt physical or verbal

aggression). It has been difficult to determine accurate bullying prevalence rates due to use of varying methods of assessment. Nevertheless, it has been suggested that bullying is a significant problem among children and adolescents.

In 2013 the United States Department of Education included the School Crime Supplement (SCS) to the National Crime Victimization Survey (NCVS). This survey was distributed to eligible households that completed the NCVS. Bullying behaviors for this survey included being made fun of/insulted, threatened with harm, physically bullied (pushed, tripped) excluded from activities, subject of rumors, destruction of property, and made to try things against their will. Respondents indicated that 21.5% of students reported traditional bullying victimization.

Nansel and colleagues (2001) examined bullying behavior involvement and psychosocial adjustment including problem behavior, school adjustment, social/emotional adjustment, and parenting. A sample of 15,868 American students in grades 6 through 10 completed the World Health Organization's Health Behavior in School aged children survey. 29% of students reported moderate or frequent involvement in bullying. 13% reported being a bully, 10.6% victim, and 6.3% both. Further results showed that bullying rates were higher among those in younger grades (6-8) compared to children in higher grades (9-10).

Nansel and colleagues (2004) conducted a survey concerning bullying behaviors and psychosocial adjustment in 113,200 youths in 25 countries. Analyses revealed varying ranges of bullying involvement from 9% in Sweden to 54% in Lithuania. In the United States, over 30% of participants reported bullying participation as either bully, victim, or both. Due to the non-

uniform nature of measurement the authors suggested further research to parse out prevalence rates.

Traditional bullying has been associated with several negative psychological outcomes including depression, anxiety, and suicidal ideation. Kaltiala-Heino, Fröjd & Marttunen (2010) investigated the relationship between bullying involvement and subsequent depression, as well as depression and subsequent involvement in bullying. A large sample of 15 year old boys and girls in Finland completed surveys including the adapted BDI, and three questions to ascertain bullying involvement and role, with a follow-up two years later. Analyses revealed a cross sectional association between being a victim of bullying at both time points for both genders. Additionally, being left alone by peers against one's wishes and social isolation were associated with depression for both ages and sexes.

Forero, McLellan, Rissel, & Bauman (1999) studied bullying behaviors and psychosocial health among school children in grades 6-10 in Australia. Almost 4,000 students completed questionnaires adapted from the WHO's health behavior survey. Results revealed a mixture of bullies, victims, and bully victims. Bullies were more likely to be male, endorse higher levels of psychosomatic symptoms, and be in grades 6, rather than 8-10. Victims were more likely to be boys, lonely, and socially isolated from peers. Bully-victims endorsed high and frequent psychosomatic symptoms and loneliness.

Traditional bullying in adults

Some researchers suggest that kids age out of traditional bullying, and that these behaviors are not common in adulthood. However, a percentage of schoolyard bullies and

victims continue to engage in bully behavior in adulthood. In fact, bullies in childhood are three times more likely to bully in adulthood in comparison to non-bullies (Lloyd, 2012).

Evidence suggests that bullying behavior in emerging adulthood is very similar to bullying behavior in childhood, but because of different labels used it is often overlooked or differently categorized (Baughman, Dearing, Giammarco, & Vernon, 2011; Randall, 1997). Tools used to measure prevalence rates of traditional bullying in college age adults are lacking, and are often developed for a particular study or adapted from childhood bullying measures (Cowie, Naylor, Rivers, Smith, & Pereira, 2002).

Newman, Holden, and Delville (2005) examined prior experience with traditional bullying and its relationship to current psychological distress. Using a large sample of undergraduate students, they administered questionnaires regarding experiences with bullying before and during high school. Measures assessing experience of stress and trauma symptoms were also administered. Data indicated that prior to high school, 33% of students were bullied occasionally and 26% were bullied frequently. During high school, 25% were bullied occasionally and 9% were bullied frequently. Generally, people who were bullied frequently and perceived more isolation reported significantly more stress symptoms. It was suggested that chronic bullying victims are at an elevated risk for psychological problems.

Research has shown that traditional bullying affects a large number of children, adolescents, and college students in varying adverse ways and may have long-term psychological consequences. While considerable research has focused on traditional bullying, there has recently been a shift in focus to examining cyberbullying.

Cyberbullying in childhood & consequences

Cyberbullying has been identified as an area of bullying distinct from that of traditional bullying (Olweus, 2012; Pieschl, Porsch, Kalh, & Klockenbusch, 2013). Cyberbullying can be carried out through a variety of mediums that do not require face to face contact including text messages, online chats, email, via social media accounts or circulating harmful materials (lies, rumors, unwanted photos) online (Tokunaga, 2010).

Selkie, Fales and Moreno (2016) conducted a meta-analysis to gather prevalence rates of cyberbullying in middle and high school age adolescents. 81 manuscripts were included in the analyses. Data showed perpetration rates ranged from 1%-41%, victimization rates from 3%-72%, and bully-victim rates ranged from 2.3%-16.7%. The researchers attributed this wide range in rates to researchers using non-uniform definitions and measures of cyberbullying.

Kowalski and Limber (2007) examined prevalence rates of electronic bullying among middle school students. A large sample of middle school students completed the Olweus Bully/Victim questionnaire in addition to questions regarding electronic bullying/perpetration. With regard to last few months, 11% of respondents indicated cyberbullying, 7% indicated experience as both bully and victim, and 4% indicated being a bully only.

Current research in this field, primarily targeting youth 18 and under has found significant correlations between cyber victimization and psychological distress (Hemphill & Heerde, 2014; Selkie, Fales, & Moreno, 2016; Schoffstall & Cohen 2011; Tsitsika et. al. 2015). For example, several studies report a correlation between cyber victimization and internalizing problems. Studies also indicate that cyber victimization is related to increased endorsement of

depressive symptoms in adolescents (Gómez-Guadix, Gini, & Calvete, 2015; Calvete, Orue, & Gómez-Guadix 2016; Gómez-Guadix, Orue, Smith, Calvete, 2013; Sampasa-Kanyinga, & Hamilton, 2015).

In a study of Spanish youth in secondary school Gómez-Guadix, Gini, & Calvete (2015) found that youngsters who were regular victims of cyber victimization were more likely to present with higher levels of depressive symptoms compared to non-victims. They also noted that those who reported victimization at two time points separated by one year were more likely to be classified as bully-victims. That is, the longer one experienced cyber bully victimization the more likely s/he were to participate in some type of cyber aggression as a bully. These “stable” victims endorsed higher levels of cyberbullying perpetration in comparison to the other groups (victims only at time 1, victims only at time 2, and non-victims). The authors stated that when victimization is stable, increasing, or decreasing over time, perpetration tends to follow the same pattern.

Bonanno and Hymel (2013) studied the impact of cyber victimization beyond the impact of traditional bullying. Students in grades 8-10 completed self-report questionnaires regarding involvement in traditional bullying, cyberbullying, depressive symptoms, and suicidal ideation. Regression analyses revealed that involvement with cyber victimization consistently predicted both depressive symptomology and suicidal ideation after controlling for traditional bullying victimization. That is, cyber victimization uniquely accounted for the experience of negative psychological effects, depression and suicidal ideation, when accounting for the impact of

traditional bullying. The authors encouraged further study to examine the relationship between cyberbullying involvement and depressive symptomology.

Perren, Dooley, Shaw and Cross (2010) examined depressive symptomology in relation to both traditional bullying and cyberbullying in Swiss and Australian students. One thousand six hundred ninety-four students from Switzerland and Australia (mean age 13.8 years) completed surveys assessing depression and bullying involvement. Analyses indicated that individuals involved in some type of bullying as victims or bully victims reported more depressive symptoms in comparisons to bullies and non-victims. Moreover, victims of cyberbullying reported significantly higher levels of depressive symptoms when controlling for traditional bullying involvement.

Cyberbullying in emerging adulthood & consequences

Cyberbullying in college age adults is a relatively new area of research focus. There are varying definitions of cyberbullying resulting in researchers using different assessment strategies. These include yes/no format questionnaires of involvement to more detailed descriptive questions regarding types of cyberbullying experienced. These adapted measures make between study comparisons difficult (Doane, Kelley, Chiang, & Padilla, 2013).

MacDonald and Roberts-Pittman (2010) examined experience of cyberbullying in students since entering college. 439 undergraduate students completed questionnaires regarding general demographics and experience with bullying and harassing behaviors. Analyses revealed that 38% knew someone who had been cyberbullied, 21.9% personally experienced cyberbullying, and 8.6% admitted cyberbullying someone else. Additionally, data suggested that

those involved in cyberbullying (victim, bully, or both) may also be involved in traditional bullying.

Kraft and Wang (2010) surveyed experiences of cyberbullying and cyberstalking in college students. 471 undergraduate and graduate students completed surveys. Data revealed that 10% and 9 % of respondents indicated experience with cyberbullying and cyberstalking respectively. College students under the age of 25 endorsed higher levels of these behaviors in comparison to older students. Moreover, experience with cyberbullying in high school was correlated with experience with cyberbullying and cyberstalking in college. Similar findings have been reported by Gibb & Devereux (2014) and Barlett et. al. (2014).

As with cyberbullying in childhood/adolescence, cyberbullying in adulthood has been linked to negative psychological outcomes. Feinstein, Bhatia, and Davila (2014) examined the relationship between rumination, cyberbullying, and depressive symptoms. Using a prospective research strategy 565 college-age adults completed online surveys at two time points, three weeks apart. 31.2% of respondents indicated cyber-victimization in the past year. Those who reported victimization also indicated higher levels of both depressive symptoms and rumination at both time points. The authors suggested that cybervictimization was associated with depressive symptoms increased over time and that this increase in depressive symptoms was moderated by rumination over depressed mood.

Selkie, Kota, Chan, and Moreno (2015) studied relations among alcohol use, cyberbullying, and depression. A sample of female college students completed surveys assessing cyberbullying, alcohol use, and depressive symptoms. Analyses revealed that 27.2% of

respondents identified experience with some type of cyberbullying. Specifically, 3% were classified as bullies, 17% victims, and 7.2% were bully-victims. Compared to those with no cyberbullying experience, participants who experienced cyberbullying victimization were three times more likely to meet clinical criteria for depression. Bullies were four times more likely to meet clinical depression criteria in comparison to those with no experience with cyberbullying. Additionally, cyberbullies were at increased odds for meeting criteria for problem alcohol use. It was suggested that these young women were just as susceptible to negative psychological consequences from bullying as more commonly studied adolescents, and that these individuals might have experienced bullying in some form prior to college.

Cyberbullying has been shown to affect a substantial number of children, adolescents, and college age students. Experience with cyberbullying has been linked to negative psychological outcomes. Importantly, while traditional bullying behavior has been thought to decrease with age, it may be the case that rather than aging out of bullying, many young adults become cyberbullies.

Loneliness

Loneliness is a profound experience for a vast number of individuals. It is often studied in conjunction with symptoms of psychological distress. Loneliness is defined as an “unpleasant experience that occurs when a person’s network of social relationships is significantly deficient in either quality or quantity” (Perlman & Peplau, 1984).

Cacioppo and colleagues (2006) studied the relationship between loneliness and depressive symptoms in middle aged adults. Using cross-sectional and longitudinal studies

involving population-based samples of middle age adults, measures assessing demographics, depressive symptomology, loneliness, hostility, social support and perceived stress were administered. Analyses revealed that loneliness accounted for significant variance in the prediction of depressive symptomology.

Jackson and Cochran (1991) examined the relationship between loneliness and psychological distress. A large sample of undergrads completed measures of loneliness and psychiatric symptomology. Analyses revealed that psychiatric symptoms were highly associated with perceptions of loneliness. Further, when parsing out individuals' psychiatric symptoms (anxiety, depression, obsessive compulsive, etc.) only depression and low self-esteem were significantly correlated with high levels of reported loneliness.

Aanes, Mittelmark, & Hetland (2010) investigated the mediating effect of loneliness on interpersonal stress and psychological distress. A sample of 6,488 Swedish men and women completed questionnaires regarding interpersonal stress, loneliness, and health outcomes. Health outcomes assessed included anxiety, depressive, and somatic symptoms. Analyses revealed that loneliness mediated the relationship between interpersonal distress and psychological health outcomes.

Ladd and Ettekal (2013) studied loneliness during adolescence and its association with depressive symptoms. Using data from 478 youth in the Project Pathways study, participants that were followed from kindergarten through 12th grade were given measures of loneliness and depressive symptoms. The goal was to examine how loneliness changes during varying developmental period of adolescence, and the interaction of loneliness with depression over time.

Analyses revealed an overall decline in peer-related loneliness from early adolescence on, while adolescents showed low levels of reported depressive symptoms and little movement across adolescence concerning depressive symptoms. The authors described depressive symptoms as “more age invariant than are peer-related feelings of loneliness” (Ladd & Ettekal, 2013 p. 1280). Loneliness and depressive symptoms demonstrated a positive correlation.

Loneliness and bullying

Research appears to suggest that elevated levels of loneliness are correlated with involvement in bullying victimization and perpetration (Tritt and Duncan, 1997). Using a large sample of secondary school students, Sahin (2012) administered measures of loneliness and cyberbullying experience. Analyses revealed a significant correlation between cybervictimization and loneliness. Additionally, loneliness predicted cybervictimization. Cyberbullying perpetration was not associated with loneliness.

Brewer and Kerslake (2015) examined associations between cyberbullying, self-esteem, empathy, and loneliness in British adolescents. Participants completed questionnaires targeting cyberbullying experience, self-esteem, empathy, and loneliness. Participants were classified as cybervictims or perpetrators. Analyses revealed that loneliness, empathy, and self-esteem together predicted cyberbullying victimization. Loneliness was positively correlated with cyberbullying victimization. Moreover, empathy was a significant predictor of perpetration, such that as empathy decreased perpetration rate increased.

Research has demonstrated that both cyber and traditional bullying have negative effects for bullies, bully-victims, and victims. Data also suggest that experiences of bullying in

childhood may have negative effects into adulthood. Moreover, while many youngsters appear to age out of bullying, rates of cyberbullying among college students suggest that traditional bullying during childhood may be a pathway to cyberbullying in adulthood. Loneliness has also been suggested as a mediator of the relationship between bullying and negative psychosocial outcomes. The purpose of the present study is to examine relationships among traditional bullying, cyber bullying, loneliness, and psychological distress in college students. It is predicted that cyberbullying will predict psychological distress as mediated through loneliness, and that prior traditional bullying involvement will moderate the relationship between cyberbullying and loneliness.

2. METHODOLOGY

Participants

Participants were undergraduate male and female college students from university located in the southeastern United States. 372 students (90 male, 282 females, and one genderqueer) ranging in age from 18-41 years completed the survey. 34.9% of the students were 18, 36.3% were 19, 13.9% were 20, 7.8% were 21, 3.2% were 22, and 2.4% were 23 or older. At the time of the survey, 63.4% of participants identified as freshman, 19.4% were sophomores, 8.3% were juniors, and 8.1% were seniors. 78.2% of participants identified as Caucasian, 15.3% as African-American, .26% as American Indian/Alaska Native, 2.7% as Asian, .26% as Native Hawaiian/Pacific Islander, and 2.9% as “other” ethnicities. 93.8% of participants self-identified as heterosexual, 2.7% as homosexual, 2.2% as bisexual, .26% as other, and .8% preferred not to answer the question (Table 1).

Measures

Demographics

Demographic information including age, race/ethnicity, sex, sexual orientation, and class classification were collected.

Cyberbullying Experiences Survey

The CES Doane, Kelley, Chiang, and Padilla (2013) designed to measure cyberbullying experience rates within an emerging adult population. It is composed of two subscales, a 21-item victimization scale and a 20-item perpetration. Participants are asked how often they have experienced or participated in differing bullying behaviors on a 6-point Likert-type scale (1= “never” to 6= “everyday/almost every day”). Scores are summed and higher scores indicate more frequent instances of bullying experience on both the victim and perpetration scales. Individual items load onto four distinct factors: unwanted contact, public humiliation, malice, deception. Good within scale internal consistency has been demonstrated for the factors; victimization scale: public humiliation ($\alpha=.89$), malice ($\alpha=.87$), unwanted contact ($\alpha=.84$), and deception (.74); perpetration scale: humiliation ($\alpha=.94$), malice ($\alpha=.90$), unwanted contact ($\alpha=.83$), and deception (.73). The two subscales were found to be highly correlated with other cyberbullying measures including Ybarra and colleagues’ (2007) Internet harassment measure (r ranging from .33-.54) and Hinduja & Patchin (2009) Cyberbullying Assessment Instrument (r ranging from .36-.54) (Doane, Kelley, Chiang & Padilla, 2013).

Depression Anxiety Stress Scales, 21 Items

The DASS-21 is a 21 item instrument which measures levels of depression, anxiety, and stress symptoms. It was developed to be a shorter version of the original DASS (a 42 item questionnaire). Antony et al. (1998) suggested the DASS-21 is more advantageous than the original DASS and other similar measures due to its apparent ability to better differentiate

depression and anxiety. The DASS-21 consists of 3 subscales, comprised of 7 items each; Anxiety, Depression, and Stress. Participants use a rating scale of 0-3 to endorse severity/frequency of symptoms based on the statement presented for each item. Item scores are summed for each subscale and multiplied by 2; resulting in individual scores for depression, anxiety, and stress. Good internal consistency has been demonstrated for each subscale; Depression ($\alpha = .94$), Anxiety ($\alpha = .87$), and Stress ($\alpha = .91$). Good concurrent validity has also been demonstrated for this measure (Antony et al., 1998).

UCLA Loneliness Scale (Version 3)

The UCLA Loneliness Scale – Version 3 (Russell, 1996) was developed to measure loneliness with a variety of populations. It consists of 20 items, 9 of which are worded positively and 11 are worded negatively. Participants are asked to indicate how often they feel what is described in the individual item using a 4 point Likert-type scale, ranging from “never” to “always.” A total score is determined by first reverse scoring 9 of the items (items 1, 5, 6, 9, 10, 15, 16, 19, and 20) and then summing all item scores. Higher scores indicate higher levels of loneliness. The UCLA Loneliness Scale (Version 3) has demonstrated good internal consistency ($\alpha = .89$ to $.94$). The measure has also demonstrated good construct validity, as well as good convergent validity (Russell, 1996).

Retrospective Bullying Questionnaire (RBQ)

The RBQ (Schäfer et.al., 2004) was developed to measure bullying victimization and perpetration in primary and secondary school. It consists of 44 items, mostly multiple choice and few short answer that assess frequency, seriousness, and duration of bullying victimization in

primary and secondary school. It also addresses bully-related psychological trauma, suicidal ideation, and bullying in college and workplace. An individual is considered a victim if s/he reports bullying in more than one-way “sometime”, and classified the experience as serious or quite serious. Single items consisting of five-point rating scales are used to measure frequency, intensity, and duration of each type of incident. Scores can be averaged to obtain separate frequency and intensity scores for primary and secondary school experiences. Relatively high test-retest reliability has been documented using Spearman correlation coefficients: primary school: $r=0.88$, secondary school $=0.87$.

Procedure

Participants were recruited via classroom announcements and the University online program, SONA. Participants enrolled in psychology courses received .5 hours of credit for research participation. Informed consent, measures, and question items were administered anonymously using Qualtrics (Enterprise Service Tools; Provo, UT). Participants provided informed consent and then completed measures regarding: psychological distress, loneliness, cyberbullying victimization, cyberbullying perpetration, previous traditional bullying victimization and previous traditional bullying perpetration. Measure administration was counterbalanced. Upon survey completion participants were debriefed and provided a list of local psychological resources.

3. RESULTS

628 participants completed the survey using Qualtrics. Missing values analyses indicated no variables with 5% or more missing values. Little's Missing Completely at Random test was not significant indicating missing data were missing completely at random. 3 participants were removed from the data because they did not give consent. 10 participants were identified as duplicates by their computer response identification number and were removed from the analysis. An additional 6 participants were removed because their responses contained more than 3 missing items. Median response time for survey completion was approximately 11.5 minutes. 125 participants were removed from analysis because their completion time was outside the range of 7-30 minutes. Additionally, 76 participants were removed from analysis due to careless responding as determined by the Blue Dot Task. The final sample consisted of 443 participants.

Prior to analyses, descriptive statistics were conducted on demographic variables, and distributions on continuous variables were examined for outliers, skewness, and kurtosis. Seventy-one multivariate outliers ($\alpha = .001$) were removed as identified by Mahalanobis distance. All variables (cyberbullying victimization, cyberbullying perpetration, loneliness, stress, depression, and anxiety) were positively skewed. Transformations performed to obtain adequate skewness and kurtosis were relatively unsuccessful.

Transformed data and non-transformed data were analyzed using PROCESS (Hayes, 2014). No differences in outcome of these analyses were observed. To ease data interpretation results are reported using non--transformed data. Mediation analyses used bootstrapping resampling technique (Hayes, 2013). Bootstrapping is commonly used in situations where “heteroskedasticity is present due to a positively skewed dependent variable” (Russell & Dean, 2000 p. 183). The final sample consisted of 372 participants. Finally, due to statistical limitations resulting from substantial sample size differences associated with the moderating variable (traditional bullying victims, $n = 36$, and nonvictims $n = 336$), a mediation analysis without the moderator was performed.

A correlation matrix of all variables was computed (Table 4). Traditional bullying victimization positively correlated with cyberbullying victimization and perpetration, as well as with loneliness, stress, anxiety, and depression. Cyberbullying victimization positively correlated with cyberbullying perpetration, stress, anxiety, and depression. Loneliness positively correlated with stress, anxiety, and depression. Interestingly, loneliness did not correlate with cyberbullying victimization or perpetration as has been previously reported (Brewer & Kerslake, 2015; Sahin 2012).

Mediation analyses were conducted to assess whether loneliness mediated the relationship between cyberbullying victimization and psychological distress. Three separate mediation analyses were conducted with bootstrap confidence intervals based on 10,000 samples. Results indicated that loneliness did not mediate the relationship between cyberbullying victimization and stress ($\beta = -.0058$; 95% CI = $-.0331$ to $.0181$), anxiety ($\beta = -.0049$; 95% CI = -

.0273 to .0158), and depression ($\beta = -.0074$; 95% CI = -.0410 to .0238). Analysis revealed cyberbullying victimization significantly predicted stress ($\beta = .1241, p > .01$), anxiety ($\beta = .1068, p > .01$), and depression ($\beta = .1064, p > .01$).

Because cyberbullying perpetration has been related to psychological distress we hypothesized that loneliness would mediate the relationship between cyberbullying perpetration and psychological distress. Three mediation analyses were conducted with bootstrap confidence intervals based on 10,000 samples. Results indicated that loneliness did not mediate the relationship between cyberbullying victimization and stress ($\beta = .0143$; 95% CI = -.0064 to .0383), anxiety ($\beta = .0122$; 95% CI = -.0056 to .0319), and depression ($\beta = .0187$; 95% CI = -.0088 to .0476). Analyses also revealed cyberbullying perpetration significantly predicted stress ($\beta = .1438, p > .01$), anxiety ($\beta = .1229, p > .01$), and depression ($\beta = .1093, p > .01$).

4. DISCUSSION

Although cyberbullying has been traditionally viewed as an issue among children and adolescents, recently research suggests cyberbullying is also problematic among college-age populations (Kraft & Wang, 2010; MacDonald & Roberts-Pittman, 2010). Consistent with these findings the current study found that 71.2% of participants endorsed cyberbullying victimization and 79.6% reported cyberbullying perpetration.

As noted above, cyberbullying is related to increases in psychological distress (Feinstein, Bhatia, and Davila, 2014; Gámez-Guadix, Gini, & Calvete (2015; Selkie, Kota, Chan, and Moreno, 2015). Consistent with the literature, current findings revealed that cyberbullying victimization and perpetration were related to depression, anxiety, and stress. Gámez-Guadix, Gini, & Calvete, 2015 have suggested that victimization and perpetration increases psychological distress symptoms due to potential stability of occurrence as well as the fact cyberbullying involvement is ubiquitous. Dooley, Pyzalski, & Cross (2009) suggested that the repetition of attack in cyberbullying leads to increases in psychological distress.

Previous reports have identified loneliness as a mediator in the relationship between cyberbullying victimization and psychological distress (Baker and Bugay, 2011). Inconsistent with prior research, in the present investigation loneliness did not mediate the relationship between cyberbullying victimization and psychological distress. Although loneliness in our

sample was normally distributed, cyberbullying victimization and perpetration were both positively skewed limiting the ability to detect the potential effect of loneliness as a mediator. Preparing the present data set for analysis resulted in the elimination of approximately 40% of participants sampled. It may be that failure to observe loneliness as a mediator of the relationship between cyberbullying victimization and cyberbullying perpetration was due to sampling difficulties. Several investigators have noted difficulties associated with samples obtained using online survey methods (Gehlbach & Barge, 2012; Johnson, 2005; Mead & Craig, 2012).

The sampling issue noted above also may account for failure to identify adequate numbers of participants who report traditional bullying involvement prior to college. It has been suggested that rather than “growing out of bullying,” bullies are likely to continue to bully in adulthood (Lloyd, 2012). The influence of previous traditional bullying likely leads to increased psychological distress and potential to continue bullying (Newman, Holden, and Delville, 2005). Since the effect of previous traditional bullying was not examined due to sampling issues, it may be beneficial for future research to explore this issue in a longitudinal study.

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LIST OF APPENDICES

APPENDIX A: RESULT TABLES

Table 1. Descriptive Statistics of Participants (n=372)

Gender	Frequency	Percentage
Female	282	75.8%
Male	90	24.2%
GenderQueer	1	.26%
Age	Frequency	Percentage
18 years	130	34.9%
19 years	135	36.3%
20 years	52	13.9%
21 years	29	7.8%
22 years	12	3.2%
23+ years	9	2.4%
Class	Frequency	Percentage
Freshman	236	63.4%
Sophomore	72	19.4%
Junior	31	8.3%
Senior	30	8.1%
Ethnicity	Frequency	Percentage
Caucasian	291	78.2%
Black/African American	57	15.3%
Am. Indian/Alaska Nat.	1	.26%
Asian	10	2.7%
Nat. Hawaiian/Pac. Is.	1	.26%
Other	11	2.9%
Sexual Orientation	Frequency	Percentage
Heterosexual	349	93.8%
Homosexual	10	2.7%
Bisexual	8	2.2%

Other	1	.26%
Prefer Not to Say	3	.8%

Table 2. Descriptive Statistics of Traditional Bullying Victimization and Perpetration (n = 372)

Traditional Bullying Victim Status	Frequency	Percentage
Non-Victim	336	90.3%
Victim	36	9.7%
Traditional Bullying Perpetration Status	Frequency	Percentage
Bully	321	86.3%
Non-Bully	50	13.4%

Table 3. Descriptive Statistics of CyberBullying Victimization and Perpetration (n = 372)

Cyberbullying Bullying Victim Status	Frequency	Percentage
Non-Victim	107	28.8%
Victim	265	71.2%
CyberBullying Perpetration Status	Frequency	Percentage
Bully	296	79.6%
Non-Bully	76	20.4%

Table 4. Correlation Matrix for primary variables

	Bivariate Correlations						
	1	2	3	4	5	6	7
1. Traditional Victim	--	.055	.181**	.152**	.189**	.168**	.159**
2. Cyberbullying Victim	.104*	--	.652**	-.025	.205**	.221**	.194**
3. Cyberbullying Perpetration	.247**	.652**	--	.072	.261**	.281**	.219**
4. Loneliness	.161**	-.025	.072	--	.380**	.405**	.536**
5. Stress	.194**	.205**	.261**	.380**	--	.732**	.695**
6. Anxiety	.195**	.221**	.281**	.405**	.732**	--	.687**
7. Depression	.146**	.194**	.219**	.536**	.695**	.687**	---

Note. *p<.05. **p<.01

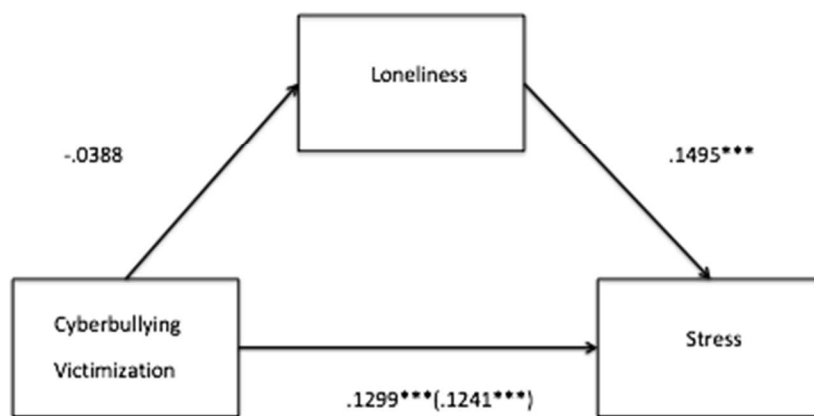


Figure 1. Indirect effect of Cyberbullying Victimization on Stress through Loneliness

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

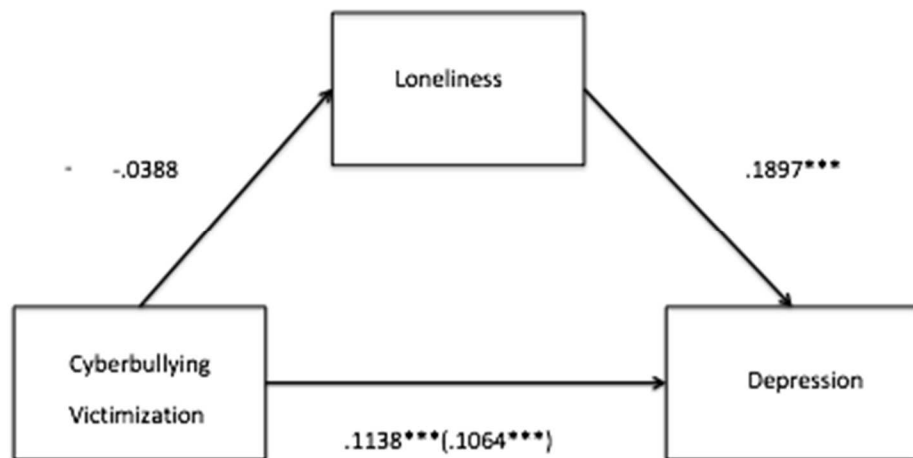


Figure 2. Indirect effect of Cyberbullying Victimization on Depression through Loneliness

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

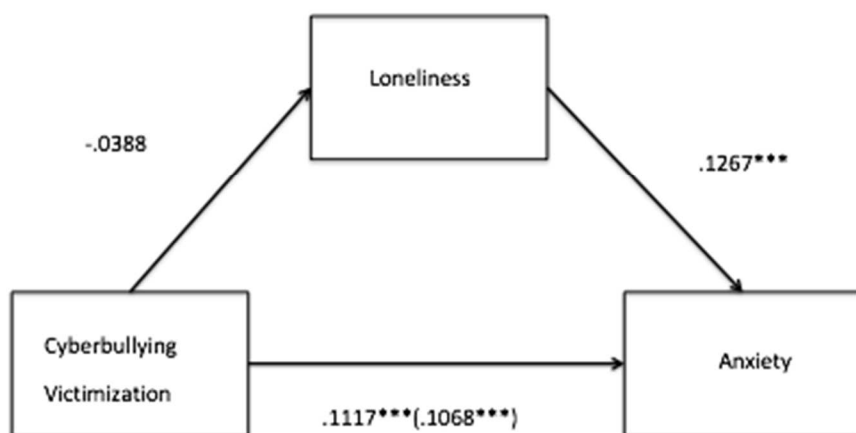


Figure 3. Indirect effect of Cyberbullying Victimization on Anxiety through Loneliness

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



Figure 4. Indirect effect of Cyberbullying Perpetration on Anxiety through Loneliness

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



Figure 5. Indirect effect of Cyberbullying Perpetration on Depression through Loneliness

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

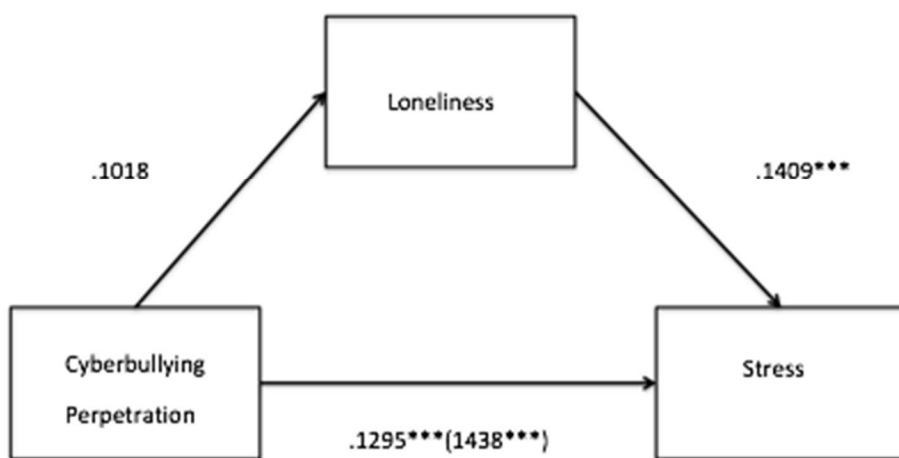


Figure 6. Indirect effect of Cyberbullying Perpetration on Stress through Loneliness

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

APPENDIX B: MEASURES

Cyberbullying Experiences Survey Victim and Perpetration Scales

In the following questions remember that “electronic” refers to any communication through any of the following modes: Internet, cell phone text messaging, cell phone picture messaging, cell phone Internet browsing, and Blackberry or similar types of devices.

Indicate how often you’ve taken part in each experience using the scale below

- 0: Never
- 1: Less than a few times a year
- 2: A few times a year
- 3: Once or twice a month
- 4: Once or twice a week
- 5: Everyday/Almost Everyday

Perpetration Scale

In the past year:

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 sent an unwanted pornographic picture to someone electronically?

Have you lied about yourself to someone electronically?

Have you tried to meet someone in person that you talked to electronically who did not want to meet you in person?

Have you sent a rude message to someone electronically?

Have you sent an unwanted sexual 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 sent a message to a person electronically that claimed you would try to find out where they live?

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 sent a message electronically to a stranger requesting sex?

Have you made fun of someone electronically?

Have you cursed at someone electronically?

Have you posted a picture electronically of someone doing something illegal?

Have you asked a stranger electronically about what they were wearing?

Victimization Scale

Has someone pretended to be someone else while talking to you electronically?

Have you shared personal information with someone electronically and then later found out the person was not who you thought it was?

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?

Depression Anxiety Stress Scale – 21 (DASS-21)

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 Did not apply to me at all

1 Applied to me to some degree, or some of the time

2 Applied to me to a considerable degree, or a good part of time

3 Applied to me very much, or most of the time

1. I found it hard to wind down

2. I was aware of dryness of my mouth

3. I couldn't seem to experience any positive feeling at all

4. I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion)

5. I found it difficult to work up the initiative to do things

6. I tended to over-react to situations

7. I experienced trembling (e.g., in the hands)

8. I felt that I was using a lot of nervous energy

9. I was worried about situations in which I might panic and make a fool of myself

10. I felt that I had nothing to look forward to

11. I found myself getting agitated

12. I found it difficult to relax

13. I felt down-hearted and blue

14. I was intolerant of anything that kept me from getting on with what I was doing

15. I felt I was close to panic

16. I was unable to become enthusiastic about anything

17. I felt I wasn't worth much as a person

18. I felt that I was rather touchy

19. 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)

20. I felt scared without any good reason

21. I felt that life was meaningless

UCLA Loneliness Scale (Version 3)

Instructions: The following statements describe how people sometimes feel. For each statement, please indicate how often you feel the way described by writing a number in the space provided. Here is an example:

How often do you feel happy?

If you never felt happy, you could respond “never”; if you always feel happy, you could respond “always.”

<u>Never</u>	<u>Rarely</u>	<u>Sometimes</u>	<u>Always</u>
1	2	3	4

1. How often do you feel that you are “in tune” with the people around you?
2. How often do you feel that you lack companionship?
3. How often do you feel that there is no one you can turn to?
4. How often do you feel alone?
5. How often do you feel part of a group of friends?
6. How often do you feel that you have a lot in common with the people around you?
7. How often do you feel that you are no longer close to anyone?
8. How often do you feel that your interests and ideas are not shared by those around you?
9. How often do you feel outgoing and friendly?
10. How often do you feel close to people?
11. How often do you feel left out?
12. How often do you feel that your relationships with others are not meaningful?
13. How often do you feel that no one really knows you well?
14. How often do you feel isolated from others?
15. How often do you feel you can find companionship when you want it?
16. How often do you feel that there are people who really understand you?
17. How often do you feel shy?
18. How often do you feel that people are around you but not with you?
19. How often do you feel that there are people you can talk to?
20. How often do you feel that there are people you can turn to?

Retrospective Bullying Questionnaire (RBQ)

The following questions are about bullying. Bullying is intentional hurtful behavior. It can be physical or psychological. It is often repeated and characterized by an inequality of power so that it is difficult for the victim to defend him/her self. All answers will be treated confidentially.

Are You Male Female

Age: _____

Please think back to your school days. You may have seen some bullying at school, and you may have been involved in some way. (Tick the choice which best describes your own experiences at school)

I was not involved at all, and I never saw it happen

I was not involved at all, but I saw it happen sometimes

I would sometimes join in bullying others

I would sometimes get bullied by others

At various times, I was both a bully and a victim

Can you briefly describe an incident in which you observed someone else being bullied or an incident in which you felt you were bullied?

PART I: PRIMARY SCHOOL

This part deals with your experiences at primary school (4–11 years). Tick the boxes that are right for you.

1. Did you have a happy time at primary school?

detested disliked neutral liked a bit liked a lot

2. Did you have a happy time at home with your family while in primary school?

detested disliked neutral liked a bit liked a lot

The next questions are about physical forms of bullying – hitting and kicking, and having things stolen from you.

3. Were you physically bullied at primary school?

hit/punched yes no

stolen from yes no

4. Did this happen?

never rarely sometimes frequently constantly

5. How serious did you consider these bullying-attacks to be?

I wasn't bullied not at all only a bit quite serious extremely serious

The next questions are about verbal forms of bullying – being called nasty names, and being threatened.

6. Were you verbally bullied at primary school?

called names yes no

threatened yes no

7. Did this happen?

never rarely sometimes frequently constantly

8. How serious did you consider these bullying-attacks to be?

I wasn't bullied not at all only a bit quite serious extremely serious

The next questions are about indirect forms of bullying – having lies or nasty rumours told about you behind your back, or being deliberately excluded from social groups.

9. Were you indirectly bullied at primary school?

had lies told about you yes no

excluded yes no

10. Did this happen?

never rarely sometimes frequently constantly

11. How serious did you consider these bullying-attacks to be?

I wasn't bullied not at all only a bit quite serious extremely serious

The next questions are about bullying in general.

12. How long did the bullying attacks usually last?

I wasn't bullied just a few days weeks months a year or more

13. How many pupils bullied you in primary school?

I wasn't bullied

Mainly by one boy

By several boys

Mainly by one girl

By several girls

By both boys and girls

14. If you were bullied, why do you think this happened?

PART II: SECONDARY SCHOOL This part deals with your experiences at secondary school (11–18 years).

15. Did you have a happy time at secondary school?

detested disliked neutral liked a bit liked a lot

16. Did you have a happy time at home with your family while in secondary school?

detested disliked neutral liked a bit liked a lot

The next questions are about physical forms of bullying – hitting and kicking, and having things stolen from you.

17. Were you physically bullied at secondary school?

hit/punched yes no

stolen from yes no

18. Did this happen?

never rarely sometimes frequently constantly

19. How serious did you consider these bullying-attacks to be?

I wasn't bullied not at all only a bit quite serious extremely serious

The next questions are about verbal forms of bullying – being called nasty names and being threatened.

20. Were you verbally bullied at secondary school school?

called names yes no

threatened yes no

21. Did this happen?

never rarely sometimes frequently constantly

22. How serious did you consider these bullying-attacks to be?

I wasn't bullied not at all only a bit quite serious extremely serious

The next questions are about indirect forms of bullying – having lies or nasty rumours told about you behind your back, or being deliberately excluded from social groups.

23. Were you indirectly bullied at secondary school?

had lies told about you yes no

excluded yes no

24. Did this happen?

never rarely sometimes frequently constantly

25. How serious did you consider these bullying-attacks to be?

I wasn't bullied not at all only a bit quite serious extremely serious

The next questions are about bullying in general.

26. How long did the bullying-attacks usually last?

I wasn't bullied just a few days weeks months a year or more

27. How many pupils bullied you in secondary school?

I wasn't bullied

Mainly by one boy

By several boys

Mainly by one girl

By several girls

By both boys and girls

28. If you were bullied, why do you think this happened?

PART III: GENERAL EXPERIENCES AT SCHOOL

29. Which were the main ways you used to cope with the bullying? (Please tick one or more options)

I wasn't bullied at school I got help from a teacher I tried to make fun of it

I got help from family / parents I tried to avoid the situation

I tried to handle it by myself I tried to ignore it I did not really cope

I fought back Other I got help from friends

30. Did you ever take part in bullying anyone while you were at school?

hit/punched yes no

stole from yes no

called names yes no

threatened yes no

told lies about yes no

excluded yes no

31. Did this happen?

never rarely sometimes frequently constantly

32. How often did you try to avoid school by pretending to be sick or by playing truant because you were being bullied?

I wasn't bullied at school Sometimes Never Maybe once a week Only once or twice Several times a week

33. When you were being bullied, did you ever, even for a second, think about hurting yourself or taking your own life?

I wasn't bullied at school Yes, once No, never Yes, more than once

34. Have you been bullied since leaving school?

I haven't been bullied since leaving school I have been bullied by my family I
have been bullied by others (please specify):

Recollections of being bullied at school (Only answer these questions, if you were bullied):

35. Do you have vivid memories of the bullying event(s) which keep coming back
causing you distress?

no, never not often sometimes often always

36. Do you have dreams or nightmares about the bullying event(s)?

no, never not often sometimes often always

37. Do you ever feel like you are re-living the bullying event(s) again?

no, never not often sometimes often always

38. Do you ever have sudden vivid recollections or "flashbacks" to the bullying event(s)?

no, never not often sometimes often always

39. Do you ever feel distressed in situations which remind you of the bullying event(s)?

no, never not often sometimes often always

40. If you were bullied, do you feel it had any long-term effects? If so, please describe
below:

PART IV: BULLYING OR HARASSMENT IN THE WORKPLACE

41. Have you ever experienced bullying in your workplace?

I wasn't bullied in my workplace

I have been bullied in my present job

I was bullied in one of my previous jobs

I have been bullied in all of my jobs

I was bullied in more than one of my previous jobs

42. Please state whether you have been bullied at work over the last six months.

No Yes, several times per month Yes, very rarely Yes, several times per week Yes, now and then Yes, almost daily

43. If yes, when did the bullying start?

Within the last 6 months Between 6 and 12 months ago Between 1 and 2 years ago More than 2 years ago

44. If you have been bullied, what did you do? (Please tick one or more options)

Tried to avoid the situation Saw my doctor (GP) Tried to ignore it I went for counseling Confronted the bully I got psychiatric help Went to the union/staff association Made use of the organisation's grievance procedure Went to personnel I left the job Discussed it with colleagues Did not really cope Went to occupational health Other Went to the welfare department

THANK YOU VERY MUCH FOR YOUR COOPERATION!

VITA

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CURRICULUM VITAE

EDUCATION

Doctor of Philosophy, Clinical Psychology August 2013 - Present
University of Mississippi, Oxford, MS
Chair: Alan Gross, Ph.D.

Bachelor of Science, Psychology August 2009 – May 2013
Murray State Univerisity
Minor: Sociology
Summa Cum Laude

ACADEMIC AWARDS

Murray State Univeristy Distinguished Psychology Student 2013

RESEARCH EXPERIENCE

Research Assistant August 2013-Present
University of Mississippi
Lab of Alan Gross
Assisting with research design, data collection, data entry, and feedback on fellow lab members' research projects

Research Assistant August 2014-Spring 2015
University of Mississippi
Lab of Danielle Maack
Assisting with data collection, data entry, and feedback on fellow lab members' research projects.

Research Assistant**January 2010-May 2011**

Loyola University Chicago

Lab of Scott R. Tindale

Assisting with research design, data collection, data entry, and analysis on various studies.

TEACHING EXPERIENCE**Graduate Teaching Assistant****August 2017 – present**

University of Mississippi, Oxford, MS

Course: Undergraduate Introduction to Psychology

Instructor: Lucy Leslie, PhD

Assisted in management of classroom activities, student questions, and study sessions.

CLINICAL EXPERIENCE**Graduate Therapist****May 2014 – Present**

University of Mississippi Psychological Services Center, Oxford, MS

Supervisor: Alan Gross, PhD.

Providing psychological services to university and community members. Treatments include Cognitive Behavior Therapy, Acceptance and Commitment Therapy, and Behavior Therapy.

Mental Health Consultant.**Fall 2015-Present**

ICS Headstart

Supervisor: Alan Gross, PhD.

Conduct center visits, collect data, develop, introduce, and train teachers in carrying out behavior plans, and assessment referrals.

Data Collection Support Staff**July 2016-July 2017**

Level Up Consulting

Supervisor: Shannon Hill, PhD.

Assist in collection of data regarding individual's behavior, conducting functional behavior analyses, and subsequent development of behavioral intervention.

Education and Research Intern and Therapist**July 2014 – July 2016**

The Baddour Center, Senatobia, MS

Supervisor: Shannon Hill, PhD.

Assist and build behavioral programs for residents of the center, provide individual therapy, run social skills groups, and provide positive behavior support.

RELATED EXPERIENCE**Assistant to Psychological Assessment Clinic Director****July 2016– June 2017**

University of Mississippi, Oxford, MS

Director: Scott Gustafson, PhD

Duties included assisting graduate therapists in conducting assessments, ordering and monitoring of assessment materials, scheduling and determination of appropriate services for incoming clients, peer supervision in regards to diagnosis and administration of test materials.

Clinic Assistant to Psychological Services Center Director **July 2016– June 2017**

University of Mississippi, Oxford, MS

Director: Scott Gustafson, PhD

Duties included assisting incoming new graduate therapists in acclimation to the clinic, answering questions and assisting prospective graduate therapists, assisting in planning, organizing, and running clinic duties and events and peer supervision.

AFFILIATIONS

Psi Chi International Honor Society at Murray State **2011-2013**

Member

Secretary (Fall 2011-Spring 2012)

President (Fall 2012 – Spring 2013)

References available upon request