

Characteristics of Cyberaggression among College Student Minorities: Exploring Pervasiveness and Impact through Mixed-Methods

Timothy Oblad^{1,*}, Elizabeth Trejos-Castillo² and Elizabeth Massengale²

¹Texas A&M University-Kingsville, USA

²Texas Tech University, USA

Abstract: Despite proximity to researchers, minority college students have not been well represented in cyber-aggressive studies. The present cross-cultural study uses mixed-methods to better understand how emerging adults are impacted from cyberbullying experiences (victims and/or bullies). All students (N=1,110) were between 18-25 years ($m=20.5$) with close to 50% being Hispanic (N=532). Results indicate self-control and self-esteem are important predictors in cyberbullying involvement, particularly among Hispanic cybervictims. Depression and suicidal ideation also served as significant predictors in involvement for cybervictimization. Through open-ended and coded responses, several themes emerged, such as being unable to focus on academics, avoiding individuals or groups because of victimization, low self-esteem, and loss of trust. Results and implications are discussed as well as recommendations for future research.

Keywords: Cyberbullying, Cyberaggression, Communication violence, Suicidal ideation, Mixed-methods.

CYBERAGGRESSION AND PSYCHOLOGICAL IMPACT

Cyberbullying concerns have quickly grown over the last decade alongside the ferocious development of social media applications (e.g., whisper, sarahah) and networking sites consumed by virtually everyone throughout the world (Powell 2009). While the benefits of social networking sites (SNS) improve and maintain communication, particularly for college students living far from home, cyber-aggressive activities may inhibit positive experiences and possibly lead to weakened relationships, unwanted distractions from academics, or loss of self-esteem.

According to Hinduja and Patchin (2014), cyber-aggressive activity among college students is difficult to estimate given the variety of research methods and measures used by researchers across campuses in the US and the world. Research has shown great range and variability of violent and aggressive forms of online communication among youth (Oblad 2012) and appear to remain a constant concern at the University level. For example in South Korea, Ismail and Kim (2010) reported three in four college students personally knew a victim of cyberbullying and over half also knew a cyberbully.

In the US, MacDonald and Roberts-Pittman (2010) provided occurrences of college student-involved

cyberbullying from both the perpetrator and victim perspective among US citizens and non-white/international students. The authors reported well over one-third of students personally knew a cybervictim (38%) and nearly one-quarter of students were victims themselves (21.9%). Such behaviors are believed to peak during middle school in which peer pressure and lack of forethought are often reasons for misguided actions among youth, especially when online. Lastly, the authors reported low perpetration of online bullying (8.6%), similar to Kraft and Wang (2010) who reported prevalence at 10% for cybervictims and 9% for cyber stalking

Schenk and Fremouw (2012) conducted a study among college students in the mid-Atlantic US measuring prevalence, impact, and coping strategies among cyberbully victims. They found a fairly small percentage of reported victimization at just 8.6% overall (N = 799). While the minor amount of victims is a positive, the psychological impact among this small percentage is concerning. Schenk and Fremouw reported more psychological distress among this group than those who had not reported cybervictimization. Analyses using the Symptom Checklist (SLC-90-R) subscales indicated significant differences between victims and non-victims with regard to depression, anxiety, and paranoia.

In Turkey, Aricak (2009) also measured psychological responses among college students and reported one in five engage in cyberbullying while just over half have at least one time. Over one-third (37%)

*Address correspondence to this author at the Texas A&M University-Kingsville, 700 University BLVD, MSC 168, Kingsville TX, 78363, USA; Tel: 361.593.2206; Fax: 362.593.2230; E-mail: Timothy.oblad@tamuk.edu

reported being victims-only of online bullying and just over 17% of students self-reported as both a perpetrator and victim. Aricak found the majority of bullies pretended to be someone else, and through path models was able to predict hostility and psychoticism as significant predictors for cyberbullies.

Comparatively, Dilmac (2009) also measured college students at the same university as Aricak (2009). Dilmac reported that over half (55%) of college students (N = 666) had been cybervictims, while nearly one quarter (22.5%) had bullied others online at least once. Females reported more victimization than males. Interestingly, succorance (to solicit sympathy or affection from others) predicted behaving as a perpetrator (as did aggression). Among cybervictims, endurance (persistence to complete tasks) was the only significant predictor of cyberbullying exposure. Dilmac suggested that these significant "needs" reveal "psychological characteristics related to cyberbullying" (p. 1319).

Molluzzo and Lawler (2012) investigated the perceptions of cyberbullying among college students and found that the majority of students (79%) were aware of cyberbullying incidents online. Despite their awareness of the cyber-phenomena, only 11% felt it was a serious issue of concern. The authors also explored student awareness of school policies, cyber-ethics, and laws prohibiting online bullying. Frequencies reported are fairly low with just 21% aware of their school policy on bullying and 34% aware of national laws (also see Zalaquett and Chatters 2014).

POSITIVE COPING AND SELF-CONSTRAINTS

Even though college students are leaving adolescence and developing into independent and responsible emerging adults, it appears they are susceptible to negative experiences online as presented above. Sleglova and Cerna (2011) investigated how cybervictims cope and found a range of responses. Some cybervictims they interviewed threatened the cyberbully they would tell someone; some chose to contact moderators online or had their phone provider block a phone number. Others preferred avoidance by creating diversions. One participant for instance responded that playing sports was a healthy outlet. Overall, one of the strongest coping mechanisms was reported to be social support. Sleglova and Cerna found that the majority of cybervictims confided and received positive feedback from friends rather than family or parents as a source of support. Only 26% mentioned parents as a source.

In 2012, Rivituso explored cyberbullying among college students with semi-structured interviews. Six themes emerged from cyberbully-victim experiences. First, feelings of fear or being vulnerable after initial bullying or fears brought back from past experiences (abuse), second, distrusting others online and/or technology itself after being attacked online. The third theme identified the importance of friends and peers as responses supported how friends were very important to the cybervictim for self-esteem. Fourth, displaying high levels of self-control by not becoming a cyberbully and avoid responding. Fifth, frustration with getting help (e.g., mods), embarrassment or depression after being bullied. Finally, self-blame by three of the participants who believed they were victimized for their own behaviors. These themes capture an overall picture of various experiences and reactions by cybervictims.

Self-Control

In addition to social support, researchers have found individuals with higher levels of self-control, subsequently have an increased chance for a more positive outlook. For example, Tangney, Baumeister, and Boone (2004) reported several positive outcomes for those with high self-control regarding: a higher GPA, increased levels of self-esteem, less alcohol and dieting abuse, more positive relationships, secure attachment to parents, and better mental health overall.

In 2012, Vazsonyi and colleagues conducted a path analysis assessing youth from 25 European countries measuring direct and indirect effects of low self-control. Results indicate low self-control has a direct effect on cybervictims and cyberbullies and an even stronger indirect effect through externalized behaviors and traditional bullying. Schenk, Fremouw, and Keelan (2013) hypothesized, it is reasonable to believe cyberbullies and cybervictims in high school may take with them tendencies (e.g., lacking self-control) into college.

Baldasare, Bauman, Goldman, and Robie (2012) explored college student opinions about what constitutes cyberbullying in focus groups. Majority of students reported that how messages are perceived was more important than what the original intent was from the sender. Interestingly, the focus group added that outcomes are generally positive when receivers of negative messages are able to cope and control their reaction thus providing more confidence and strength. In other words, having a sense of self-control may help college students avoid added confrontation or

internalizing negative messages. To date there is little research among college students that investigates self-control and cyberbullying. Based on empirical evidence available, there is a need to further explore the role of self-control in cyberaggression.

Self-Esteem

Most research that explores how cyberbullying impacts an individuals' self-esteem involves pre-adolescent to adolescent ages (Valkenburg, Peter, and Schouten 2006; Yang *et al.* 2010) often indicating lower self-esteem for those engaging in risky online behaviors and cyberaggression. In 2010, Patchin and Hinduja found middle school students (N = 1,963) who had experienced cyberbullying (perpetrators and victims) had significantly lower amounts of self-esteem compared to those students who had little or no experience of perpetration and/or victimization.

Brighi and colleagues (2012) reported self-esteem scores among traditional victims, cybervictims, and bully- in three European secondary schools from the UK, Spain, and Italy. Results indicated that personal attacks online significantly and negatively correlated with high levels of self-esteem. Victims of either type of bullying reported lower of self-esteem. Severe cybervictims reported more loneliness with parents and peers as well as feeling ambivalent towards being lonely (Didden *et al.* 2009).

Ellison, Steinfield, and Lampe (2007) found social networking was linked to undergraduate students' overall well-being and provided an increase in self-esteem particularly for those with low life satisfaction or self-esteem. Because of these findings and current lack of research available it is important to further explore the impact of self-esteem on emerging adults involved in online communication violence (Dilmac 2009).

STUDY AIMS

The purpose of the present mixed-methods study aims to extend the literature and fill in gaps in current research first, by exploring phenomena of cyberbullying and impact of such involvement among minority college students. Factors such as self-control or suicide and depression are important to investigate as previous studies have identified these as risk factors associated with bullying among youth (Cash and Bridge 2009) but lack explanation for emerging adults. Second, to provide a voice for a largely underserved population in research (Sheikh 2005), open-ended questions will

identify meaningful experiences from minority cyberbullies and cybervictims to determine what impact violent or aggressive forms of communication have brought on individuals' academic obligations, social/personal life, and what serious outcomes, if any, arose from perpetration or victimization experiences. Lastly, few cyberaggression studies consider cross-cultural comparisons (Barlett *et al.* 2014; Li 2008), thus, the present study adds to current literature through the examination of prevalence of cyber-aggressive-related behaviors among minorities, exploration of student attitudes and characteristics as predictors of cyberaggression (e.g., self-control, suicidal ideation) and through open-ended questions explore opinions about the impact and outcomes cyberaggression has had (on cyberbullies, cybervictims, and bully-victims).

Because cyberbullying research with college students has only recently emerged (Baldasare *et al.* 2012), a mixed-methods approach provides an informative study for researchers and policy makers to draw from and better understand what college student minorities experience. Some advantages of having both forms of qualitative and quantitative data is that a more holistic approach to the data will allow for context of student experience voiced by students themselves to inform the results (Creswell 2015; Espey, Duffy, and McGuckin 2013). This is especially important for cross-cultural research in which detailed perspectives from minorities have been fairly limited. In more traditional means, quantitative analyses will also be useful to analyze the data for a large number of college students and discover potential significant relationships.

METHODS

Participants

All participants (N=1,110) were 18-25 years of age, over half were female (N = 634). Majority of respondents were Hispanic (48%) followed by African American (18%), Asian (16%), Caucasian (14%) and other/mixed (6%). Sophomores made up the largest class (23%) followed by: seniors (22%), freshman (21%), juniors (20%) and graduate students (14%).

Procedures

The study was purposely aimed at over-sampling minority college students for cross-cultural comparative analyses. Participants that were not within the age range as specified by Arnett (2000) were removed before any analysis. Data collection took place during

fall 2014 and spring 2015. Survey procedures were approved by the Human Research Protection Program (HRPP) at a university in Texas. Recruitment announcements were designed to invite minority participation to complete an online survey advertised weekly through a university-wide email announcement. Participants were provided instructions and could stop taking the survey and/or skip questions at any moment they choose. Data was collected at one-time in the form of quantitative and qualitative (open-ended) questions that took between 10-25 minutes to complete on average for those responding with written-text.

Measures

CyberBully/CyberVictim Scales

Two scales were created for this study (see Kowalski and Limber 2007) to measure preference of electronics/technology by perpetrators and victims. Five items included: *In the past year, how often have you bullied (or been victimized by) others through: email, cellular phone, instant, private, or direct messages, social networks, and other.* The five items were measured on a 5-point scale ranging from 1 (*never*) to 5 (*very often*). Cronbach alpha levels for the cyberbully scale ($\alpha = .80$) and cybervictim scale ($\alpha = .84$) were highly reliable.

Suicidal Ideation

Four items from Hinduja and Patchin (2010) exploring suicidal ideation among a large sample of middle school students (Cronbach's $\alpha .70$). The items asked participants [have you ever...] "*felt so sad/hopeless almost every day for two weeks in a row that you stopped doing some usual activities*", "*seriously thought about attempting suicide*", "*made a specific plan about how you would attempt suicide*", and "*attempted suicide*". Range of responses was from 1 (*never*) to 4 (*often*). Cronbach's alpha was very high ($\alpha = .82$).

Self-Esteem

Based on Rosenberg's (1979) measure of self-esteem, five items were included: "I feel that I am a person of worth, at least to others," "I wish I could have more respect for myself," "I take a positive attitude toward myself," "on the whole, I am satisfied with myself," and "I am able to do things as well as most other people." Responses are based on a 4-point scale from 1 (strongly agree) to 4 (strongly disagree): Before analyses, items were reverse coded so that higher mean scores would indicate presence of more self-esteem. Cronbach's alpha was good ($\alpha = .74$).

Social Capital

Six items were used to identify social support taken from the *Longitudinal Survey of Adolescent Health* (Harris *et al.*, 2008). First, "*do you worry about what others think of you?*" The last four items asked how much the respondent feels adults, friends, teachers/professors, and their parents "*care about you.*" Using a 4-point scale from 1 (*strongly agree*) to 4 (*strongly disagree*). Reliability for social capital was good ($\alpha = .71$).

Self-Control

From the *Longitudinal Survey of Adolescent Health* (Harris *et al.*, 2008), self-control was measured with six items: *How often do you have trouble: getting along with your teacher/professor, paying attention in school, getting your homework done, keeping your mind on what you are doing, getting along with other students and finally feel you are doing everything about right,* with a 5-point scale from 1 (*never*) to 5 (*everyday*). Self-control measure reported good reliability ($\alpha = .76$).

Center for Epidemiological Studies Depression Scale-10 (CES-D-10)

To measure how respondents have felt or behaved regarding depressive symptoms a short 10-item scale was used (Radloff, 1977). Responses ranged from 1 (*never*) to 5 (*all of the time*). Previous use has indicated adequate reliability and internal consistency (Bjorgvinsson *et al.* 2013). Reliability was highly reliable as Cronbach's alpha level was .78.

Open-Ended Items

To explore how personal experiences with cyberbullying may impact college students' personal and academic lives, a series of open-ended questions were created for this study. Four open-ended items explore what impact cyberbullying had on academics, social life, personal growth, and friendship: (e.g., "*what impact has cyberbullying experiences had on your academic obligations?*"). Another open-ended question sought to explore cyberbullying experiences of all participants, including those identified as non-involved. "*Have you seen friends or peers impacted/affected by cyberbullying?*" Finally, one question explored the severity of cyberbullying aggression: "*Have you experienced or witnessed any serious outcomes because of cyberbullying (as victim or as an aggressor), if so what happened?*" A follow-up question asked, "*What platform(s) (e.g., social network, text message) was used?*" Previous research would suggest Facebook Steinfield, Ellison, and Lampe (2008)

Table 1: Demographic Characteristics of the Sample Population by Gender, Age, Ethnicity and Parent Education

Variables	Total N	N	%	M (SD)
Sex	1100			2.6(1.27)
Male		476	42.9	
Female		634	57.1	
Age (18-25)	1110			20.5(1.9)
Ethnicity	1110			2.4(.92)
Caucasian		144	13	
Hispanic		532	48	
African American		178	16	
Asian		176	16	
Multiple/Other		80	7	
Parent Education	1104			3.5(1.2)

as the likeliest source but college students may be experiencing or witnessing others being bullied on other less-known types of social networks such as anonymous apps (e.g., Yik Yak, Sarahah).

PLAN OF ANALYSIS

A *convergent design* was used as means of exploring and providing a more complete understanding of cyber-aggressive phenomena among college students. By corroborating results from two methods, interpretation can be drawn from combined strengths of both data sets (Creswell, 2015). This mixed-methods study involved concurrent timing; both quantitative and qualitative strands of data were collected during a single phase of the study. For quantitative analyses, hierarchical regression models were conducted to examine amount of variability in cybervictimization and cyberbullying (separately) accounted for after controlling for demographic variables, individual characteristics (e.g., self-control), contextual effects (social capital), and internalized behaviors (e.g., depression). Two sets of hierarchical regression models were conducted using the total sample filtered by ethnicity to further explore potential differences between groups. The other/multiple group was removed from analyses due to the fact that it may be difficult to compare with the other ethnic groups.

For the qualitative portion, open-ended questions were examined for emergent trends or themes from minorities involved in cyber-aggressive activities to add to the cross-cultural literature (Vandebosch and Van Cleemput 2008). A qualitative software program was used to help develop emergent categories and themes through coding.

RESULTS

Quantitative Analyses

Before analyses, data was checked to assess assumptions for hierarchical regression. Sample size was adequate for all models as there were enough participants based on number of independent variables in each set of regressions (Tabachnick and Fidell 2007). Multicollinearity and singularity were not concerns as correlations were not highly correlated (weak to moderate) or combined with each other. Collinearity statistics were also checked for violation of Tolerance and VIF.

Eight separate hierarchical regressions were performed in two sets. The first set, to explore how individual characteristics (self-esteem, self-control) and contextual effects (social capital) predicted cybervictimization and cyberbullying in the total sample and then by ethnicity to investigate potential group differences. The second set of hierarchical models explored associations among internalizing behaviors (depression and suicidal ideation) with cybervictimization and cyberbullying involvement by total sample and by ethnic group. Results are presented in order of each set of regressions.

Individual and Contextual Effects

Total Sample Models

Hierarchical multiple regressions were performed to investigate the ability of self-esteem, self-control, and social capital to predict associations with cybervictimization and perpetration. For cybervictimization in the first step, four predictors were entered as control

variables: age, sex, ethnicity, and parent education and explained less than 1% (.07) of variance in cybervictimization. In the second step, self-esteem and self-control were entered and found to be statistically significant explaining for 6.8% of variance $F(5, 622) = 7.54, p < .001$. The final step added a contextual predictor social capital, which was also statistically significant $F(7, 621) = 6.45, p < .001$. In the final model two predictors were statistically significant. First, self-control with the largest beta ($\beta = .20, p < .001$) followed by self-esteem ($\beta = .13, p < .05$).

A second hierarchical regression was performed as described above but the dependent variable was changed to perpetration (cyberbully). The first step in the model was demographic controls: age, sex, ethnicity, and parent education, which accounted for 3.4% of the variance. The second step included self-esteem and self-control (individual characteristics) and was also statistically significant adding 9.1% of variance to the model (R^2 change of 5.7%), $F(6, 622) = 10.45, p < .001$. The final step of social capital (contextual component) was also significant, but did not contribute any R^2 change, $F(7, 621) = 8.92, p < .001$. In the final model, self-control was the only significant predictor ($\beta .25, p < .001$).

Models by Ethnicity

As discussed above (total sample model), the same hierarchical regressions were carried out but in this model, ethnicity was removed from controls and used as a filter to conduct analysis by ethnic group (see Table 2). For cybervictimization in the first step, three predictors were entered as control variables: age, sex, and parent education. Demographic variables explained a very modest amount of variance among Caucasian, Hispanic, and African American and Asian groups (1.2% to 6.1%).

In the second step, self-esteem and self-control were added to the model and were statistically significant among Hispanics, explaining an additional 6.2% of variance $F(5, 332) = 4.38, p < .001$, as well as with African Americans at 11.5% of variance $F(5, 90) = 2.34, p < .05$. The second model was not significant among the Caucasian ($F(5, 88) = 1.69, p = ns$) or Asian ($F(5, 95) = 2.18, p = ns$) groups.

Social capital was entered in the final step and was statistically significant as a predictor for Hispanics $F(6, 331) = 3.81, p < .001$ with total variance at 6.5%; and Asians $F(6, 94) = 2.28, p < .001$, which accounted for 12.7% (R^2 change = 6.6) of variance. The Caucasian (F

(6, 87) = 1.40, $p = ns$) and African American ($F(6, 89) = 2.01, p = ns$) groups were not significant and social capital did not add to variance.

In the final model among all independent variables, three predictors were statistically significant among Hispanics. Self-esteem ($\beta = -.14, p < .05$), followed by self-control ($\beta = .13, p < .05$) and age ($\beta = -.11, p < .05$). For African Americans, only self-control was a significant predictor ($\beta = .33, p < .01$), while among Caucasians and Asians no predictors were significant.

For perpetration, the first step entered three predictors that were controls (age, sex, and parent education). Hierarchical regression revealed a modest range of variance among Caucasian, Hispanic, Asian, and African American groups (3.7% to 6%). For the second step, self-control and self-esteem were added to the model and was statistically significant for three groups. Caucasians $F(5, 88) = 4.74, p < .001$, explaining 16.7% of the model. Hispanics, $F(5, 332) = 5.1, p < .001$, with an additional 3.4% explained adding up to an R^2 change to 7.1% of total variance, and African Americans $F(5, 90) = 3.48, p < .01$, the second step explained an additional 1% of the variation in cyberbullying. The Asian group was not significant $F(5, 95) = 1.40, p = ns$.

In the final step, social capital was added to the model and significant among three of the four groups. For Caucasians, $F(6, 87) = 3.91, p < .01$, the final model was significant although social capital did not contribute additional variance to the final model even when controlling for other predictors. Hispanics $F(6, 331) = 4.21, p < .001$, likewise reported a significant final model with social capital added, although no additional variance was explained as R^2 remained at 7.1%. Finally, African Americans $F(6, 89) = 2.99, p < .05$ accounted for an additional .06% in variance when adding social capital. For Asians, ($F(6, 94) = 1.51, p = ns$) social capital was unable to predict perpetration. In the final model that included all independent variables, self-control was the only significant predictor among Caucasians ($\beta = .39, p < .001$), Hispanics ($\beta = .19, p < .001$), and African Americans ($\beta = .37, p < .001$).

Internalized Behaviors: Depression and Suicidal Ideation

Total Sample Model

In the first step, controls were entered: age, sex, ethnicity, and parents' education and explained just under 1% (.08) of variance in cybervictimization. After

entry of depression in step two, total variance explained by the model was statistically significant at 5.9% of variance after controlling for demographic variables and depression ($F(4, 607) = 7.7, p < .001$). In step three, suicidal ideation was added to the model and explained an additional 1.9% of variance in cybervictimization $F(6, 606) = 8.6, p < .001$. In the final model, depression ($\beta = -.19, p < .01$) and suicidal ideation ($\beta = .16, p < .001$) were significant predictors of victimization.

The same regression model was performed to predict perpetration. Step one added controls (age, sex, ethnicity, parents' education), which explained 3.4% of variance in cyberbullying. Depression was added in the second step and explained an additional 1.2% of variance $F(5, 607) = 5.36, p < .001$. Finally, suicidal ideation was added in the third step and explained an additional 0.3% of variance ($F(6, 606) = 4.71, p < .001$) in cyberbullying after controlling for demographics and depression.

Models by Ethnicity

Hierarchical regressions were conducted to examine the association between cybervictimization and cyberbullying with depression and suicidal ideation by ethnic groups. To predict cybervictimization the first step included controlling for demographics that explain a modest amount of variance among each group (from 1.3% to 5.7%).

Depression was introduced in the second step and contributed significantly in the Hispanic regression model $F(4, 322) = 3.38, p < .01$, accounting for 4% of variation in cybervictimization, and in the Asian regression model $F(4, 94) = 3.05, p < .01$, accounting for 13.7%. Adding depression had no significant impact among Caucasians $F(4, 89) = 1.73, p = ns$, or African Americans $F(4, 94) = 3.74, p = ns$.

In the final step, suicidal ideation was added to the model and was a significant contributor in cyberbullying among three groups. First, Hispanics reported an additional 1.6% of the variation in cyberbullying with a significant change in $R^2, F(5, 322) = 3.83, p < .01$. Second, among African Americans, an additional 3.9% of variance was explained with a significant change in $R^2, F(5, 87) = 2.62, p < .05$. Lastly, suicidal ideation also added to the model among Asians and explained an additional 1%, enough for a statistically significant change in $R^2, F(5, 93) = 3.05, p < .05$. Suicidal ideation was not able to predict cybervictimization among the Caucasian group $F(5, 88) = 1.73, p = ns$. When

reviewing coefficients in the final model (see Table 3), for Hispanics, only suicidal ideation was a significant predictor ($\beta = .15, p < .05$). Among the African American group, suicidal ideation was a trending predictor ($\beta = .23, p < .06$). For Asians, the final model only had one significant predictor, depression, ($\beta = .24, p < .05$).

A hierarchical regression to predict cyberbullying was explored using independent groups with ethnicity as well. As with all models, control variables were entered as step one with a modest range of variance between 2.2% and 5.8% among all groups. The second step introduced depression and was significant among the Caucasian and Hispanic groups. For Caucasians, depression explained an additional 6.5% of the variation in cyberbullying with a significant change in $R^2, F(4, 89) = 2.80, p < .05$. Comparatively, for Hispanics, variation did not change R^2 value, but remained significant $F(4, 322) = 3.27, p < .05$.

In the final step, suicidal ideation was added to the regression model. Only the Hispanic grouping saw any significant change in additional variation in cyberbullying at just under 1% $F(5, 321) = 3.11, p < .01$, predicting 4.6% of cyberbullying in total. In the final model, suicidal ideation was not a significant predictor among Caucasians $F(5, 88) = 2.22, p = ns$; African Americans $F(5, 87) = .84, p = ns$; or Asians $F(5, 93) = 1.40, p = ns$. Although depression was trending among Caucasians ($\beta = .25, p < .06$) after suicidal ideation was added.

Qualitative Analyses

Several themes emerged among those who had experienced cyberbullying (as bullies and/or victims) during college or before (e.g., high school). Many students shared experiences that led to dropping courses, skipping classes, failing and even transferring. Some reported losing friends, becoming less sociable, having lowered self-esteem and yet, others reported no negative impact whatsoever.

Cyberbullying Experiences and Academic Impact

Three themes emerged from minority college students who self-reported academic setbacks from cyberbullying experiences (e.g., too distressed to study). The first theme *inability to focus*, emerged after several participants responded feeling unable to focus in class or to complete homework assignments, as shared by a Hispanic senior:

Table 2: Final Hierarchical Regression Models Predicting Cybervictimization and Cyberbullying Involvement Controlling for Individual Characteristics and Contextual Effects with by Ethnicity

	CyberVictim												CyberBully											
	Caucasian			Hispanic			African American			Asian			Caucasian			Hispanic			African American			Asian		
	b	SE	β	b	SE	β	b	SE	β	b	SE	β	b	SE	β	b	SE	β	b	SE	β	b	SE	β
Age	.03	.05	.06	-.03	.02	-.11*	.01	.04	.01	-.01	.03	-.05	-.02	.03	-.07	-.01	.01	-.04	.03	.02	.11	-.03	.02	-.02
Sex	-.12	.20	-.07	-.02	.07	-.02	.05	.14	.03	-.08	.11	-.07	-.25	.11	-.22*	-.12	.04	-.18**	-.04	.08	-.04	-.19	.08	-.24*
Parent Education	.04	.10	.04	-.04	.02	-.01	-.07	.07	-.10	-.09	.05	-.17	-.01	.05	-.02	-.01	.01	-.04	.002	.04	.004	.05	.04	.14
Self-esteem	-.22	.18	-.13	-.15	.06	-.14*	-.04	.13	-.03	-.01	.12	-.01	-.06	.10	-.06	-.03	.04	-.04	-.06	.08	-.08	-.06	.09	-.07
Self-control	.22	.12	.20	.11	.05	.13*	.30	.10	.33**	.13	.08	.17	.27	.07	.39***	.09	.03	.19***	.21	.06	.37***	.05	.06	.09
Social capital	.02	.14	.02	.04	.04	.05	-.06	.10	-.06	-.13	.08	-.17	.014	.08	.02	.01	.03	.01	-.05	.06	-.08	-.01	.06	-.01
R ²				.013			.012			.061			.047			.037			.038			.06		
Total R ²				.065**			.119*			.127*			.165**			.034***			.124**			.069		

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

Table 3: Final Hierarchical Regression Models Predicting Cybervictimization and Cyberbullying Involvement Controlling for Internalized Behaviors by Ethnicity

	CyberVictim												CyberBully											
	Caucasian			Hispanic			African American			Asian			Caucasian			Hispanic			African American			Asian		
	b	SE	β	b	SE	β	b	SE	β	b	SE	β	b	SE	β	b	SE	β	b	SE	β	b	SE	β
Age	.04	.05	.09	-.03	.02	-.10	.01	.04	.03	-.04	.03	-.02	-.04	.03	-.02	-.01	.01	-.04	.03	.02	.13	-.01	.02	-.01
Sex	-.07	.19	-.04	.02	.06	.002	-.02	.13	.02	-.09	.11	-.08	-.22	.11	-.20*	-.13	.04	-.20***	-.06	.08	-.08	-.20	.08	-.25***
ParEdu	.06	.10	.07	-.04	.03	-.01	-.04	.07	.06	-.08	.05	-.15	.01	.06	.01	-.01	.02	-.05	.01	.04	.01*	.05	.04	.14
Depression	.25	.17	.19	.08	.06	.09	.20	.12	.18	.20	.10	.24*	.20	.10	.25 [†]	-.02	.03	-.03	.06	.07	.10	.06	.07	.11
Suicide	.10	.18	.07	.16	.07	.15*	.28	.14	.23 [†]	.06	.10	.08	.02	.11	.02	.06	.04	.10	.06	.08	.09	-.07	.07	-.13
R ²				.014			.013			.057			.047			.039			.022			.058		
Total R ²				.056**			.131*			.147**			.112 [†]			.046**			.05			.069		

*p<.05, **p<.01, ***p<.001, ^{ab} denotes a trend (p<.06).

Cyberbullying has taken a toll on my academics. It makes me question things I know, I start stressing out more about it and I forget when things are due, or can't concentrate enough to focus on a quiz or test.

Another participant responded "After it happened, I certainly lost some focus and drive for my academics." Others added components of stress being reason of losing focus: "the stress from cyberbullying took away from my studies and therefore made me behind in school. It affected my entire mood in all aspects of life." Another participant also reported a similar experience: "It made me unable to focus in class and on my [home] work."

The second theme, *immobilized schoolwork*, emerged from more severe experiences impacting participants greatly. A Caucasian junior student shared her personal and academic struggle:

Cyberbullying affected me in the way that I was unhappy with my life and everything I did. I felt as if I wasn't good enough. Eventually pushing me to be less dedicated...I failed my entire second semester of my sophomore year due to depression from cyberbullying.

One participant added: "I was too depressed to continue to complete many assignments in school and I would spend my time in bed or in front of the TV to forget my problems." A few participants also mentioned "skipping class" as a means to avoid bullies and that it often led to failing grades. Some students reported changing their major or transferring to a different university as shared by an African American sophomore: "...I only went to two classes due to racism...it got so bad that I just transferred universities from [an east coast college] to here where I have not experienced any problems."

The last theme (*no impact*) emerged as numerous participants who experienced cyberbullying reported no significant negative impact on academic performance. As surmised by one student: "I felt attacked but I did not let cyberbullying impact academics." Others simply stated "ignored the bullying", "I'm a better, stronger person", "at most it's just a minor annoyance", or "I didn't care enough to notice because it had no impact on my life".

Cyberbullying Experiences and Social Impact

Minority students were asked what, if any impact cyberbullying may have had on personal or social obligations. Three themes emerged: *no impact*, *avoidance*, and *self-esteem*. As the theme no impact fits well with both academic impact and social impact results are discussed first. Many participants had reported never having experienced cybervictimization. However, several stated that it did not impact them socially but rather "it was just annoying", "humorous rude comments from friends", or "just angry banter" and it was easy to "brush it off." One participant added: "The bullying intended to make me stop being friends...I ignored it and continued with my friendship."

The next theme, *avoidance*, emerged as students reported avoiding certain individuals and/or groups, and social events or crowded areas in general. A Hispanic graduate student who had to endure losing a larger group of friends shared her cyberbullying incident: "I was bullied for two years by a girl that was once my friend. I got extreme anxiety and couldn't even leave my room to go to class..." Other participants chose to ignore individuals at the cost of friendship: "I stopped talking to the person who threatened me and we are no longer friends..."

Students also avoided social events or crowded areas: "I stopped attending social events to avoid certain people", "gave up social life" or "stayed indoors and away from people to avoid bullies." One student replied that he had "become extremely shy around people and avoid people to not be tense." Three participants quit athletics, one example: "I quit the basketball team, stopped going out, and blocked many people on Facebook".

The last emergent theme (*self-esteem*) arose from students who recognized feelings of lowered self-esteem: "bullying never bothered me in the classroom, it was more self-esteem and the way I thought people saw me" or "lost self-confidence". A Hispanic freshman student added feeling more self-conscious after peers teased her physical presence: "Cyberbullying made me very uncomfortable, and very self-conscious. This led to me being more to myself, closed off, and creating an effort in avoiding peers who caused the cyberbullying."

Cyberbullying Impact on Growth, Friendships

Two themes emerged after reviewing participant experiences that witnessed first- or second-hand,

cyberbullying incidents. The first theme, *personal growth* emerged from participants who shared accounts of learning from painful experiences:

Experiencing cyberbullying during my undergraduate career had a great impact on my development as a student and as an individual...having been discriminated against for my race/ethnicity via social media had a positive impact because...I saw the need to educate the community about the Hispanic presence in efforts to combat negative stereotypes minority students such as myself are perceived to fit under.

A wise student shared how to avoid conflict: "I've learned to not feed trolls or give into cyberbullying...If you don't respond...the troll becomes unsatisfied and moves on..."

The second theme that emerged was *friend support*. Participants cited helping friends and interfering with potential bullies as means of stopping others from attempting to "flame" or "mock" peers or friend within or outside their group. An African American graduate student reported both of those in regards to supporting a friend:

If I see someone being rude to my friend or if my friend is saying something aggressive I will ask my friend if everything is okay. I always let my friends know that if something like that happens, let me know, and I can do my best to help.

In comparison, a sophomore Asian student felt cyberbullying experiences: "made me stand up for myself and has strengthened and ruined friendships." It is evident that friend support is a helpful tool in how one perceives cyberbullying attacks.

Serious Outcomes from Cyberbullying

Minority college students were asked to share any serious outcomes because of cyberbullying. *Suicidal Ideation* emerged as a theme as dozens of participants shared their connections to incidents that transpired in close proximity: "I knew a girl in my high school that actually committed suicide"; "I haven't, but I've heard about teens try to kill themselves, or those that actually did cause of bad bullying." Participants also shared personal experiences with suicidal ideation: "I thought about suicide," or "I attempted suicide in high school,

and became very distant from friends and family." One student shared the following:

I have personally been affected after I came out as a lesbian. Friends I had my whole life were making jokes about me on Facebook and I really got to me. I had suicidal thoughts for a while at the time

Fortunately, it was more commonly reported among college students that bullying incidents were not as serious as suicidal tendencies and in general were just minor discomforts. Among a large group of participants however, responses about losing friendships or trust in others emerged as a theme (*loss of trust*). For example, one participant shared: "I was extremely disappointed and hurt at the sight of the post, comments, and the likes." Similarly, another participant responded: "it's not easy to realize that someone hates your guts for no reason." Another student added: "I do not trust people and I now believe that people deep down are selfish and before social media it was easier to hide."

DISCUSSION

The present study found low self-esteem significantly predicted cybervictimization as a total sample. By ethnicity, only Hispanics were significant when effects were controlled for. Implications of this finding are important for administrators, counselors, or advisors to be aware of the needs of the Hispanic student body as well as future studies to consider unique differences within Hispanic cultures. Through qualitative analyses, low self-esteem emerged among students who avoided people after cyberbullying incidents. After bullying, many students reported low self-esteem, feeling self-conscious or little self-worth.

Several participants that had experienced cyberbullying shared that it caused no problems, issues, and had no impact. This emerged as a theme contrasting those who did suffer academically or socially. As found with Sleglova and Cerna (2011) among adolescents, some students show resilience often by recognizing anonymous threats or bullying as just "annoying." Simply ignoring perpetrators may serve as a possible means of limiting unwanted aggression for emerging adults. In contrast, participants who struggled to focus on academics or had to avoid others occasionally mentioned actually replying with vengeful messages.

In the second set of hierarchical regression models, self-control was added to test individual characteristics. Those with low self-control were more likely to be cybervictims as well as cyberbullies. This clearly demonstrates support of previous findings (Vazsonyi *et al.* 2012) in that levels of self-control are important identifiers among individuals, even emerging adults. When considering contextual effects (e.g., support from peers) self-control remained significant in the final models indicating individual characteristics remain stronger predictors of cyberaggression than social support.

By ethnicity, self-control significantly predicted cybervictimization among Hispanics and African Americans. Likewise for cyberbullying, low self-control predicted more involvement among Caucasians, Hispanics, and African Americans. Through open-ended responses, varying levels of self-control were revealed among those who participated, retaliated, and ignored unwanted aggressive behaviors from others. Several students reported, "trolling" as simply annoying or inane. Other students struggled to ignore it and let academics or social life struggle by skipping class or flaking out.

Hierarchical regressions sought to predict cybervictimization and cyberbullying with depression and suicidal ideation. These internalized behaviors were indeed significant predictors among the total sample. By ethnicity, the final model shows depression should be of particular concern among Hispanics, Asians, and Caucasians (trending). Similarly for suicidal ideation, Hispanics and African Americans (trending) were the only ethnic groups with suicide as a significant predictor. Previous studies have linked suicidal ideation (Hinduja and Patchin 2010) and depression (Schenk and Fremouw 2012) to cyberbullying but for emerging adults, research has not been well substantiated.

Qualitative findings also added to the convergent design by providing personal experiences from students who have struggled with or witnessed first-hand depression and suicidal ideation. For example, the suicidal ideation theme emerged among participants who shared experiences often as witnesses to friends or peers, rather than self-inflicted. In rare cases, participants shared their struggles with suicidal ideation.

IMPLICATIONS, LIMITATIONS, AND FUTURE DIRECTIONS

Implications for this study are important for university personnel and administrators to understand and recognize that emerging adults are constantly online and are involved in cyber-aggressive activities as victims and bullies. On-campus counseling centers and other on-campus sources should review results of this study to provide awareness of the characteristics that are associated with involvement in unwanted online aggression and more importantly, individual characteristics that are resistant to bullying behaviors. Results from the study provides evidence of emerging adult experiences and importance of self-esteem and self-control. Developing such characteristics may help reduce trauma from victimization.

This study provided a cross-cultural lens and was able to capture voices of participants through their own words. To date, there have been few studies (Barlett *et al.* 2014; Li 2008) that provide comparative analyses. Future studies will need to examine the role of self-esteem and self-control as it was found in this study to be more influential than social capital (e.g., friends, parents). One limitation of this mixed-methods study was the format of open-ended questions. Several students skipped open-ended portions of questions after responding they had indeed experienced cyberaggression (as victims or as bullies). A smaller focus group could provide more depth as to how communication violence is processed and internalized with guided follow-up questions that could provide salient information.

REFERENCES

- Aricak, Osman. 2009. "Psychiatric Symptomatology as a Predictor of Cyberbullying among University Students." *Eurasian Journal of Educational Research* 34:167-84.
- Arnett, Jeffrey. 2000. "Emerging Adulthood: A theory of Development from the Late Teens through the Twenties." *American Psychologist* 55(5):469-80.
<https://doi.org/10.1037/0003-066X.55.5.469>
- Baldasare, Angela, Sheri Bauman, Lori Goldman, and Alexandra Robie. 2012. "Cyberbullying? Voices of College Students." Pp. 127-156 in: *Misbehavior Online in Higher Education*, edited by C. Wankel and L. Wankel. UK: Emerald Group Publishing Limited.
[https://doi.org/10.1108/S2044-9968\(2012\)0000005010](https://doi.org/10.1108/S2044-9968(2012)0000005010)
- Barlett, Christopher, Doug Gentile, Craig Anderson, Kanae Suzuki, Akira Sakamoto, Ayuchi Yamaoka, and Rui Katsura. 2013. "Cross-cultural Differences in Cyberbullying Behavior: A short-term Longitudinal Study". *Cross Cultural Psychology* 45:300-13.
<https://doi.org/10.1177/0022022113504622>

- Bjorgvinsson, Throstur, Sarah Kertz, Joe Bigda-Peyton, Katrina McCoy, and IdanAderka. 2013. "Psychometric Properties of the CES-D-10 in a Psychiatric Sample." *Assessment* 20(4):429-36.
<https://doi.org/10.1177/1073191113481998>
- Brighi, Antonella, Giannino Melotti, Annalisa Guarini, Maria Genta, Rosario Ortega, Joaquin Mora-Merhcan, Peter Smith, and Fran Thompson. "Self-esteem and Loneliness in Relation to Cyberbullying in Three European Countries." Pp. 32-56 in: *Cyberbullying in the Global Playground: Research from International Perspectives*, edited by L. Qing, D. Cross, and P.K. Smith. UK: Wiley-Blackwell.
<https://doi.org/10.1002/9781119954484.ch3>
- Cash, Scottye and Jeffrey Bridge. 2009. "Epidemiology of Youth Suicide and Suicidal Behavior. *Current Opinion in Pediatrics* 21(5):613-91.
<https://doi.org/10.1097/MOP.0b013e32833063e1>
- Creswell, John. 2015. *A Concise Introduction to Mixed Methods Research*. London: Sage.
- Didden, Robert, Ron Scholte, Hubert Korzilius, Jan M. H. de Moor, Anne Vermeulen, and Mark O'Reilly. 2009. "Cyberbullying Among Students with Intellectual and Developmental Disability in Special Education Settings." *Developmental Neurorehabilitation* 2(3):146-51.
<https://doi.org/10.1080/17518420902971356>
- Dilmac, Bulent 2009. "Psychological Needs as a Predictor of Cyber Bullying: A Preliminary Report on College Students." *Educational Sciences: Theory and Practice* 9(3):1307-25.
- Ellison, Nicole, Charles Steinfield, and Cliff Lampe. 2007. "The Benefits of Facebook Friends: Social Capital and College Students' Use of Online Network Sites." *Computer-Mediated Communication* 12(4):1143-68.
<https://doi.org/10.1111/j.1083-6101.2007.00367.x>
- Espey, Karen, ConorMcGuckin, and Joseph Duffy. 2013. "A Mixed Methods approach to Understanding Cyberbullying: A Role for Both Quantitative and Qualitative Research." *Trinity Education Papers*, 2:112-26.
- Hinduja, Sameer and Justin Patchin. 2014. *Cyberbullying fact sheet: Identification, prevention and response*. Cyberbullying Research Center. Retrieved from www.cyberbullying.us/cyberbullying-identification-prevention-response.pdf
- Hinduja, Sameer, and Justin Patchin. 2010. "Cyberbullying, and Suicide. *Archives of Suicide Research* 14(3):206-21.
<https://doi.org/10.1080/13811118.2010.494133>
- Ismail, Tahseen, and Carol Kim. 2010. "The Prevalence and Views on Cyber-bullying and Related Internet Regulation Among South Korean University Students." *American Association of Behavioral and Social Science Journal* 14:89-103.
- Kowalski, Robin and Susan Limber. 2007. "Electronic bullying among middle school students." *Journal of adolescent health* 41(6): S22-S30.
- Kraft, Ellen and Jinchang Wang. 2010. "An Exploratory Study of the Cyberbullying and Cyberstalking Experiences and Factors Related to Victimization of Students at a Public Liberal Arts College." *International Journal of Technoethics* 1(4):74-91.
<https://doi.org/10.4018/jte.2010100106>
- Li, Qing. 2008. "ACross-Cultural Comparison of Adolescents' Experience Related to Cyberbullying." *Educational Research* 50(3):223-34.
<https://doi.org/10.1080/00131880802309333>
- MacDonald, Christine D. and Bridget Roberts-Pittman. 2010. "Cyberbullying Among College Students: Prevalence and Demographic Differences." *Procedia-Social and Behavioral Sciences* 9:2003-9.
<https://doi.org/10.1016/j.sbspro.2010.12.436>
- Molluzzo, John and James Lawler. 2012. "A study of the perceptions of college students on cyberbullying." *Information Systems Education Journal* 10(4): 84.
- Oblad, Tim. 2012. "Understanding Cyberbullying in the Net generation: A Meta-Analytic Review." MS Thesis, Department of Human Sciences, Texas Tech University.
- Patchin, Justin and Sameer Hinduja. 2010. "Cyberbullying and Self-esteem." *School Health* 80(12):614-21.
<https://doi.org/10.1111/j.1746-1561.2010.00548.x>
- Powell, Juliette. "33 Million People in the Room: How To Create, Influence, and Run a Successful Business With Social Networking." New Jersey: Que Publishing.
- Radloff, Lenore. 1977. "The CES-D Scale: A Self-Report Depression Scale for Research in the General Population." *Applied Psychological Measurement* 1(3):385-401.
<https://doi.org/10.1177/014662167700100306>
- Rivituso, Giacomo. 2012. "Cyberbullying: An Exploration of the Lived Experiences and the Psychological Impact of Victimization Among College Students an Interpretive Phenomenological Analysis." PhD Dissertation, Northeastern University.
- Rosenberg, Morris. 1986. "*Conceiving the self*." Florida: RE Krieger.
- Schenk, Allison M. and William Fremouw. 2012. "Prevalence, Psychological Impact, and Coping of Cyberbully Victims Among College Students." *School Violence* 11(1):21-37.
<https://doi.org/10.1080/15388220.2011.630310>
- Schenk, Allison, William Fremouw, and Colleen Keelan. 2013. "Characteristics of College Cyberbullies." *Computers in Human Behavior* 29(6):2320-7.
<https://doi.org/10.1016/j.chb.2013.05.013>
- Sheikh, Aziz. 2005. "Why are Ethnic Minorities Under-represented in US Research Studies?" *PLoS Medicine* 3(2):e49.
<https://doi.org/10.1371/journal.pmed.0030049>
- Šléglová, Veronica and AlenaCerna. 2011. "Cyberbullying in Adolescent Victims: Perception and Coping." *Cyberpsychology: Journal of Psychosocial Research on Cyberspace* 5(2).
- Steinfeld, Charles, Nicole Ellison, and Cliff Lampe. 2008. "Social Capital, Self-esteem, and Use of Online Social Network Sites: A Longitudinal Analysis." *Applied Developmental Psychology* 29(6):434-45.
<https://doi.org/10.1016/j.appdev.2008.07.002>
- Tabachnick, Barbara G. and Linda Fidell. 2007. "*Using Multivariate Statistics*." Boston: Pearson Education.
- Tangney, June, Roy Baumeister, and Angie Boone. 2004. "High Self-control Predicts Good Adjustment, Less Pathology, Better Grades, and Interpersonal Success." *Personality* 72(2):271-324.
<https://doi.org/10.1111/j.0022-3506.2004.00263.x>
- Valkenburg, Patti M., Jochen Peter, and Alexander Schouten. 2006. "Friend Networking Sites And Their Relationship to Adolescents' Well-being and Social Self-esteem." *Cyberpsychology and Behavior* 9(5):584-90.
<https://doi.org/10.1089/cpb.2006.9.584>
- Vandebosch, Heidi and Katrien Van Cleemput. 2008. "Defining Cyberbullying: A Qualitative Research into the Perceptions of Youngsters." *Cyberpsychology and Behavior* 11(4):499-503.
<https://doi.org/10.1089/cpb.2007.0042>
- Vazsonyi, Alexander, Hana Machackova, Anna Sevcikova, David Smahel, and AlenaCerna. 2012. "Cyberbullying in Context: Direct and Indirect Effects by Low Self-control Across 25 European Countries." *European Journal of Developmental Psychology* (2):210-27.
<https://doi.org/10.1080/17405629.2011.644919>
- Yang, Yuan-Sheng, Ju-Yu Yen, Chih-Hung Ko, Chung-Ping Cheng, and Cheng-Fang Yen. 2010. "The Association Between

Problematic Cellular Phone Use and Risky Behaviors and Low Self-esteem among Taiwanese Adolescents." *BMC Public Health* 10(1):217.
<https://doi.org/10.1186/1471-2458-10-217>

Zalaquett, Carlos P., and Seria Shia Chatters. 2014. "Cyberbullying in College: Frequency, Characteristics, and Practical Implications." *Sage Open* 4(1):2158244014526721.
<https://doi.org/10.1177/2158244014526721>

Received on 18-08-2017

Accepted on 20-10-2017

Published on 03-11-2017

DOI: <https://doi.org/10.6000/1929-4409.2017.06.21>

© 2017 Oblad *et al.*; Licensee Lifescience Global.

This is an open access article licensed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/3.0/>) which permits unrestricted, non-commercial use, distribution and reproduction in any medium, provided the work is properly cited.