Cyberbullying among Emerging Adults: Exploring Prevalence, Impact, and Coping Methods

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Abstract: Cyberbullying has been a concern among adolescents, parents and educators for years for its seemingly boundless reach and potential harm it can cause. Aggressors are often masked with anonymity and targeted individuals may feel powerless over what others do online. While such issues and concerns are prevalent among adolescent ages, college students are not invulnerable from parallel experiences. In the US, Macdonald and Roberts-Pittman (2010) found less than ten percent of college students were cyberbullies but over one-fifth reported as cybervictims. This study explored prevalence of cyber victimization and perpetration as well as evidence of damaging effects and impact. Among the college student sample of 1,921, participants were 18-25 years (mean age 20.1), just over half Caucasian (55.5%) and female (67.9%). Results indicated victimization most often occurred through phones (19.9%) and social networks (20.4%). For perpetration, prevalence was low across all platforms, however phone use was the preferred means of attacking others (6.5%). Low self-esteem was a significant predictor for victimization and perpetration. For males only, social capital was a significant predictor of victimization. Future directions and recommendations for follow-up studies are discussed as well as the importance of this study in relation to college student activities and behaviors.

Keywords: Cyberbullying, Perpetration, Emerging Adults, Self-Esteem.

Cyberbullying research has largely focused on adolescent youth due to heavy involvement in such activities, among taking part in other risky behaviors. According to Williams and Guerra (2007), cyberbullying activities typically peak during middle school age but cyber aggressive activities may continue for individuals well into emerging adulthood.

Finn (2004) measured cyberstalking among college students and found over 10% reported threats, insults or harassment online. Aricak (2009) reported psychiatric symptoms were prevalent among cyberbully and cybervictim college students.

Today, college students are constantly online for school purposes, collaborations, and to maintain social and familial ties through social networking. Walker, Sockman, and Koehn (2011) reported 11% of their sample were cybervictims during enrollment, and most attacks occurred through Facebook (64%). Perhaps it is not surprising that cyberbullying activities could be prevalent among this age group when multiple stressors/pressures are placed among individuals.

CYBER AGGRESSION IN COLLEGE

Current research varies in terms of frequencies of online bullying across campuses.

Researchers throughout the world have reported cyberbullies as being prominent among college campuses. In South Korea, Ismail and Kim (2010) found three quarters of college students knew someone who was a cybervictim and over half of their sample knew a cyberbully. In Turkey, Aricak (2009) reported nearly twenty percent (19.7%) engaged in cyberbullying one or more times and that over half (54%) reported being a cybervictim at least once. Another study in Turkey (Dilmac, 2009) reported similar rates of perpetration (22.5%) and victimization (55.3%). In the US, MacDonald and Roberts-Pittman (2010) found less than ten percent (8.6%) of college students were cyberbullies but over one-fifth (21.9%) reported as cybervictims while in school.

In an exploratory study at a Northeastern university, Walker and colleagues (2011) found over half of college students (54%) personally knew someone who had been victimized online and 11% self-reported as cybervictims. Further, among the entire sample, over one- third (34%) received unwanted messages of affection, 30% were harassed repeatedly with demanding, needy, or obsessive messages. Finally, over twenty percent (23%) received unsolicited pornographic or obscene images.

TRADITIONAL BULLYING IN COLLEGE

Previous research has found cyberbullying and face-to-face bullying often overlap (Dilmac, 2009). However, measuring one or both types of bullying is rare among college students (Chapell *et al*., 2004). Traditional bullying generally declines by emerging adult age but Chapell and colleagues found over one-third of undergraduates reported seeing physical

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bullying and that about 1 in 5 (18.5%) were bullied themselves. The authors also reported 29% of undergraduate students witnessed instructors bullying their students during class.

They concluded, "Bullying by students and teachers is a fairly common problem in college" (p. 61).

One study that measured bullying in college found over 70% of traditional bullying victims in elementary and high school bullied others during college (Chapell *et al*., 2006). They also found up to half of their sample (N = 119) that were bully-victims or bullies before college repeated the same behaviors after arrival at the university level. Chappell and colleagues also provided a summary of other researchers' findings of such risks related to being bullied that associate with negative health issues such as depression, suicidal ideation (or attempt), and anxiety. They proposed that university counseling centers need to better recognize the increasing accounts of bullying as it is a "growing problem" (p. 644) even among emerging adults.

Although the proposed study will not measure traditional bullying, the author felt it was important to review its prevalence among college students and note that there may be overlap between traditional bullies/victims and cyber bullies/victims as previous research has found (Dilmac, 2009; Schneider, O'Donnell, Stueve, & Coulter, 2011). Further, it is evident that there are several distractions young adults may have to face—often living on their own for the first time—in terms of online culture, expectations, and appropriate actions.

To help prepare students with understanding benefits and risks of online behaviors some universities have begun creating online resources or even introductory orientations for new students so they are aware of risks from saying potentially self-incriminating or damaging things to bullying others online or sharing private information. For example, the University of Texas-Austin, have warned students that social media use may even prevent students from finding future employment: "It's not uncommon for companies to run an internet search of job applicants before they offer…a position" (Security Awareness, 2010). Besides the dangers of misrepresenting oneself with hurtful words, inappropriate actions, or having private images or information taken or shared without permission, there are also concerns of mental health and well-being for college students in relation to their social networking behaviors.

MENTAL HEALTH AND SOCIAL MEDIA

Opportunities for bullying through SNS have never been higher as social networking is very common among college students often with over 90% participation (Stuzman, 2006; Subrahmanyam, Reich, Waechter, & Espinoza, 2008). With such high levels of participation, researchers are concerned that cyberbullying experiences may increase and thus impacting mental health. For example, victimization has been tied to mental health issues, depression, anxiety, and substance abuse (Campbell, 2005; Campbell *et al*., 2013; Mitchell, Ybarra, & Finkelhor, 2007). Schenk and Fremouw (2012) reported increased rates of suicidal ideation, paranoia, depression, and anxiety with college students who self-reported as victims of cyberbullying.

Davila and colleagues (2012) examined associations between social networking and depression. The authors found in their first study that the quality of social networking is associated with symptoms of depression rather than the amount of time a user engages online. Further, students who spent an excessive and fixated focus of problems and distresses with friendships online were associated with more negative networking, greater symptoms of depression and mood depressions after interacting with others online (see also Ryan & Xenos, 2011).

Alternatively, social media can improve mental health. Ellison, Steinfield, and Lampe (2011) measured the relationship between social media use and social capital. The authors found a stronger relationship existed among those who reported lower levels of self-esteem, compared to those with greater self-esteem in which social capital did not predict a strong relationship. Valkenburg, Peter, and Schouten (2006) measured adolescent self-esteem and found a direct relation between tone (positive or negative response) and level of self-esteem. Unsurprisingly, receiving positive feedback increased a users' self-esteem whereas negative feedback diminished levels of self-esteem. These findings suggest social media can provide instances in which bridging social capital is achieved and how behaviors on SNS may improve self-esteem for the user.

SOCIAL CAPITAL

Social capital is defined as social networks having reciprocal value (Putnam, 2001) or internalized social and cultural coherences among society (Feldman & Assaf, 1999).

Subrahmanyam and colleagues (2008) reported SNS are important among college students to remain connected to offline friends and retain social capital. Other studies have measured ways in which social capital is reduced online such as through online gaming or other recreation uses (e.g. streaming) that is negatively associated with social capital (Shah, Kwak, & Holbert, 2001; Zhang & Chia, 2006).

Liu and Brown (2014) discussed the importance of SNS with regard to social capital by reporting that in order to accrue bridging social capital (close connections), self-disclosing on SNS was important to provide basic profiles to connect and define resources with others. Individuals with larger, diverse networks have access to more social capital than those with small, less diverse networks (Valenzuela, Park, & Kee, 2009). However, Ellison, Steinfield, and Lampe (2011) found increasing the number of friends on Facebook improved social capital up to a point. Having too many friends may be difficult to manage and could nullify the impact on social capital, as little to no connections are made to an extent number of "friends" online.

In a longitudinal study among undergraduates, Steinfield, Ellison, and Lampe (2008) explored social capital, self-esteem, and intensity of Facebook use. They found over the course of one year, that use of Facebook predicted social capital as well as when controlling for self-esteem. The authors concluded social capital is easily obtained because barriers are lowered for those that struggle with self-esteem and students are able to form networks that lead to bridging social capital.

STUDY AIMS

This review has discussed bullying among college students, particularly cyberbullying that often occurs through social media use. SNS use has been linked to mental health issues for reasons of bullying (Campbell, 2005) and researchers have investigated the salience of social capital as a protective buffer or lack thereof for college students who socialize online. The purpose of the study is to first, determine prevalence of cyberbullying and cybervictimization among college students in west Texas and identify any significant differences between gender and ethnicity. Second, to examine how self-esteem and social capital predict involvement with cyber aggression among emerging adults.

METHODS

Participants

All participants were current college students and 18 or older (N = 1,921). Students between 18-25 years of age were retained in this pilot study to remain within the emerging adult age range as specified by Arnett (2000, 2011) due to limited research available with this age group. As discussed by Arnett (2000), emerging adulthood is "not really adolescence, but it is not really adulthood either" (p. xii). The transitions made during this period (as suggested by Arnett) require a closer look at its' own life course. From the original sample, 265 students 26 years and older were thus removed (only cut-off criterion for scope of this study) and a final sample of N= 1,921 participants (67.9% female, 32.1% male) remained. The mean age was 20.1 (*SD* = 1.9). Participants self-identified as Caucasian/white (55.5%) followed by Hispanic/Latino (20.7%), Asian (9.6%), multiple ethnicities/other (7.1%), and Black/African-American (7.1%).

Procedures

After Human Research Protection Program (HRPP) approval, surveys were made available online through an anonymous survey application (Qualtrics) and advertised weekly through a school-wide announcements service. An option to stop at any desired time or choosing to not select an answer was provided for each question. Completion of online surveys typically ranged between 10-15 minutes although once started, surveys were saved for a period of seven days before locking out the participant if not completed. For compensation, participants were entered into a prize lottery for gift cards up to $20.

Measures

Controls

Demographic variables included were *gender* (1=male, 2=female), *age* (range = 18-25 years), *ethnicity* (1=Caucasian/white, 2=Hispanic/Latino, 3=Black/African- American, 4=Asian, 5=other/multiple), and *parent education* which combined mother and father education levels (1=less than high school, 2=high school, 3=some college, 4=completed college, 5=graduate, law, medial, or equivalent).

Aggressor/Targeted Individuals Scales

After thorough review of studies' scales measuring perpetrators and victims (see Kowalski & Limber, 2007)

two scales were created for this study that addressed the same forms of electronic uses by perpetrators and victims. Five items were included which asked: *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 were highly reliable for the Aggressor scale (α = .81) and Targeted Individuals scale (α = .82).

Self-Esteem

Based on Rosenberg's (1979) 10-item self-esteem scale, a short form was created for this study due to its high reliability (Baumeister, Campbell, Krueger, & Vohs, 2003). This scale comprised of five items: "*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*." Self-esteem was measured on a 4-point scale ranging from 1 (*strongly agree*) to 4 (*strongly disagree*), which was reverse coded such that the higher response would indicate more self-esteem. Cronbach's alpha indicated a high reliability (α = .80).

Social Capital

Social capital included six items from the *National Longitudinal Study of Adolescent Health* (Add Health), which assessed how much participants indicated feeling cared about by adults, professors, parents, and friends. An additional item asked, "*Religiosity/spirituality is important to me*" based on Putnam (2000) regarding religious/spiritual connectedness to social capital. A 5-point scale was used ranging from (1 *not at all,* 2-*very little*, 3-*somewhat*, 4-*quite a bit*, 5-*very much*). Cronbach's alpha indicated good reliability (α= .75).

Plan of Analysis

Preliminary analyses first explored demographics, correlations, skewness/kurtosis, and reliability. All criteria were met as described by Tabachnick and Fidell (2007) that in cases of positive skewness reasonable sample sizes will not make a substantial difference in analyses. Histograms were also inspected as recommended by Tabachnick and Fidell. In cases of missing data, list wise deletion was used in order to provide more stringent results (Allison, 2002). Correlations were inspected to review relationships between all variables in this study and are provided in Table **6** of which are reported in expected direction. For the main study constructs, each scale was checked for reliability using Cronbach's Alpha levels (α) and for possible need of deleting specific items based on poor fit within each created measure (see Table **1**).

The first aim of this study was to explore prevalence of cyber aggression among college students (for gender and ethnicity) by presenting frequencies and proportions of participant involvement. Raw means were residualized by demographics to remove all potential confounding effects and results are provided in Tables **4** and **5**.

The second aim of this study was to examine how self-esteem and social capital predict involvement with cyber aggression. This was examined by a series of multiple hierarchical regressions conducted to explore cybervictimization and cyberbullying in three steps. First, controlling for demographics (gender, parent education, etc.), followed by individual self-esteem, and in the final model, a contextual variable of social capital.

RESULTS

Demographics

After removing participants that did not meet the criteria, the final sample size was (N=) 1,921 and majority female (N=1,305; 67.9%). The mean age was 20.1 with an age range 18-25 years. By class, freshman were the largest group at just over 30.8%, followed by sophomores with 20.4%, 20.1% were

Table 1: Descriptive Statistics of Main Study Constructs

Scales	Item	α	*M* (*SD*)	Sample item
Targeted Individuals	5	.82	1.46 (.60)	In past year, how often have you been bullied, threatened by *email*?
Aggressor	5	.81	1.15 (.34)	In past year, how often have you bullied or threatened others through *cell phone*?
Self Esteem	5	.80	3.1(.55)	I feel that I am a person of worth, at least to others.
Social Capital	5	.75	3.83 (.77)	How much do you feel your friends care about you?

seniors, 17.9% were juniors, and smallest group being graduates with 10.8%. Demographic characteristics of this study provide slightly better representation of minority students when compared to university statistics available (Population Center, N.d.). The size of this university is just over 30,000 students. In terms of parent education, the majority reported having at least some college experience.

Demographics are provided in Table **2**.

Table 2: Demographics

	M(SD)	N	%
N=	2.6(1.4)	1921	100
Gender	1.7 (.47)		
Female		1305	67.9
Male		616	32.1
Age	20.1(1.9)		
18		521	27.1
19		317	16.5
20		315	16.4
21		314	16.3
22		203	10.5
23		111	5.8
24		88	4.5
25		52	2.7
Race/Ethnicity	2.1(1.6)		
Caucasian		1067	55.5
Hispanic		397	20.7
African-American		137	7.1
Asian		184	9.6
Other/Multiple		136	7.1
Parent Education	3.4(1.1)	1909	

Prevalence

Among all college students (18-25 years) who answered the items about victimization (N=1,712) and perpetration (N=1,622), 89% (N=1,527) reported never being victimized through email with only 4% (N=69) reporting multiple (*sometimes, often, very often*) attacks through email. Multiple victimization through instant, private, and direct messages was 10.9% (N=350) and by other, 8.3% (N=143). Unsurprisingly, cell phones (e.g. text message) at 19.9% (N=341) and social networks at 20.4% (N=350) were the most prevalent platforms of victimization.

For perpetration, results were fairly low as the majority of respondents selected never participating in any platform. For example, those reporting sending multiple threatening messages through email totaled just 1% (N=17) of the entire sample. Perpetration through other at 1.8% (N=30), instant, private, and direct messages (multiple times) was 2.4% (N=37), Social networks at 3.6% (N=67), and attacking others through cell phones at 6.5% (N=106), which was the most prevalent platform used to attack others.

Descriptives

For simplicity purposes, raw means are presented in the table followed by residuals as shown in Tables **3** and **4**. Each platform used by aggressors and/or targets were split by gender and ethnicity. Results indicate significant differences by gender and ethnicity with cyberbullies and cybervictims. Raw means were fairly comparable between genders but through standardized residuals (removed demographic effects) males reported significantly more involvement as perpetrators in regards to cell phone use F (1, 1,612) = 38.92, p <. 001; sending instant/private messages, F (1, 1,613) = 18.3, p <. 001; social networks, F (1, 1,612) = 17.3, p <. 001; and by other, F (1, 1,611) = 29.3, p <. 001. There were no significant gender differences by sending email, F (1, 1,613) = 1.8 p = ns.

By victimization, females reported significantly more involvement through cell phone use, F (1, 1,706) = 6.9, p <. 01; instant/private messages, F (1, 1,704) = 4.81, p <. 05; social networks, F (1, 1,704) = 10.2, p <. 001; and by other, F (1, 1,706) = 8.1, p <. 01. There were no significant gender differences by receiving email, F (1, 1,700) = .19, p = ns.

For ethnicity, significant differences between level of involvement as a cybervictim and perpetrator were found. By victimization, Asians reported significantly higher levels of involvement by email, F (4, 1,697) = 17.0, p < .001; cell phone, F (4, 1,703) = 5.6, p < .001; instant/private messages, F (4, 1,701) = 8.0, p <. 001; social networks, F (4, 1,701) = 4.6, p < .001; and by other F (4, 1,703) = 8.2, p <. 001. In rank order by ethnicity, the African- American group reported the next highest levels of involvement (behind only the Asian group) followed by White/Caucasian, Hispanics, and other/multiple groupings. For cell- phones, social networks, and other, ordering was the same but other/multiple and Hispanic groups change places.

Similarly for perpetration, Asians reported statistically significantly higher levels of involvement in

Table 3: Raw Means of Electronic Platforms with Standardized Residuals (F-Statistic) Removed Demographic Effects Split by Gender

	Targeted Individuals				Aggressors					
	Male (N =560)		Female (N =1,159)		Male (N =524)			Female (N =1,091)		
	M	SD	*M*	SD	*F*	*M*	SD	*M*	SD	*F*
Email	1.2	.63	1.2	.50	.19	1.1	.32	1.0	.22	1.8
Cell	1.6	.89	1.8	.91	6.9**	1.5	.75	1.2	.60	38.9***
IMDM	1.4	.77	1.4	.78	4.8*	1.2	.49	1.1	.30	18.3***
SNS	1.6	.93	1.8	.95	10.2***	1.3	.68	1.2	.47	17.3***
Other	1.4	.76	1.3	.65	8.1**	1.2	.52	1.1	.29	29.3***

*p <. 05, **p < .01, ***p < .001. ^p = .051.

sending email, F (4, 1,610) = 8.7, p < .001; instant/private messages, F (4,1,610) = 3.85, p < .01; and by other, F (4, 1,608) = 3.7, p < .01. There were no significant differences in levels of involvement through cell phones or social networks (overall, larger means in each grouping compared to other platforms). In terms of rank order in email, instant/private messages, and in other, African-American grouping reported the next highest levels of involvement followed by Caucasian, Hispanics, and other/multiple.

Regression Analyses

Hierarchical multiple regression was used to explore the roles of self-esteem and social capital as predictors of involvement in cyber aggressive behaviors (victimization or perpetration). Preliminary analyses checked for multicollinearity (tolerance, VIF) and homoscedasticity for violations. Results are first presented by gender to help address research gaps in cyber aggressive involvement among emerging adults and then as a combined total sample.

Females

For females, in step 1, age, ethnicity, and parent education were entered, which explained 1.1% of the variance in females. In step 2, self-esteem was added which contributed an additional 3.5% among females. In the final model, social capital was entered and as a whole, total variance measures explained 4.7% among females F (1, 896) = 8.8, p < .001 after controlling for demographics. Only two controls were significant in the final model with self- esteem as largest beta in negative direction (β = -.19, p < .001) and ethnicity (β =. 10, p < .01).

For exploring perpetration, the same models were used but the dependent variable included the aggressor scale rather than the cybervictim scale. For females, the model was not significant in any step and thus was removed from this portion of analyses.

Males

For males, in step 1, age, ethnicity, and parent education were entered, which explained 4.3% of the

Table 4: Raw Means of Electronic Platforms with Standardized Residuals (F-Statistic) Removed Demographic Effects Split by Ethnicity

	Targeted Individuals											Aggressors										
	Caucasian (N =957)		Hispanic (N =359)		African-American (N =127)		Asian (N =158)		Other (N=113)			Caucasian (N =909)		Hispanic (N =337)		African-American (N =121)		Asian (N =148)		Other (N=109)		
	M	*SD*	*M*	*SD*	*M*	SD	*M*	SD	*M*	SD	*F*	*M*	*SD*	*M*	*SD*	*M*	S D	*M*	SD	*M*	SD	*F*
Email	1.1	.46	1.1	.41	1.2	.68	1.5	1.0	1.1	.36	17.0***	1.0	.21	1.0	.12	1.1	.39	1.2	.52	1.0	.16	.8.7***
Cell	1.8	.90	1.6	.80	1.6	.95	1.9	1.0	1.7	.92	5.6***	1.3	.61	1.3	.56	1.3	.80	1.4	.20	1.3	.70	.76
IMD M	1.4	.71	1.3	.70	1.5	.85	1.7	1.1	1.5	.89	8.0***	1.1	.35	1.1	.31	1.1	.41	1.2	.60	1.1	.31	3.8**
SNS	1.7	.92	1.7	.90	1.7	1.0	2.0	1.1	1.7	.96	4.6***	1.2	.53	1.2	.49	1.3	.70	1.3	.64	1.2	.52	1.1
Other	1.3	.66	1.3	.60	1.4	.80	1.7	1.0	1.2	.56	8.2***	1.1	.35	1.1	.30	1.2	.56	1.2	.60	1.0	.19	3.7**

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

variance in males. During step 2, self-esteem was added which contributed an additional 1%. In the final model, social capital was entered and as a whole total, variance measures explained 5.9% of the variance in cybervictimization among males F (1, 439) = 6.6, p < .001 after controlling for demographics. Four controls were statistically significant in the final model with social capital and ethnicity as highest beta values (β = .14, p < .01) followed by age (β = .13, p < .01) and self-esteem with a negative beta value (β = -.13, p < .01).

To predict levels of cyberbullying among males, the same hierarchical multiple regression model was used as discussed above. In step 1, age, ethnicity, and parent education were entered and explained 1.2% of the variance in males. In step 2, self-esteem was added which contributed an additional 1.2% F (1, 439) = 2.7, p < .05. In the final model, social capital was entered and as a whole, did not add to the total variance of measures which remained at 2.4% of the variance among males F (1, 448) = 2.2, p < .06. This was noted as a trending variable but not significant with traditional probability values. Self-esteem had a larger, negative beta value (β = -.12, p < .05) then age (β = .11, p < .01).

Combined Sample

For cybervictimization, in the first step of the model, age, gender, ethnicity, and parent education was entered and explained 2.1% of the variance. Self-esteem was added in step 2 (4.6%) and in the final step, social capital (4.9%). Self-esteem (β = -.17, p < .001), ethnicity (β = .11, p < .001), age (β = .08, p < .01), and social capital (β = .06, p < .05) were the only significant predictors in the final model F (6, 1,340) = 11.58, p < .001.

The same hierarchical regression approach was used to predict cyberbullying involvement. The first step (demographics) explained 3.1% of the variance, in the second step (self-esteem) only 3.6% of variance was explained. Adding social capital in the final step did not explain or add any additional variance to the model. Thus with cyberbullying F (6, 1,339) = 8.38, p < .001, the only significant predictors were gender (β = -.16, p < .001) and self- esteem (β = -.07, p < .01).

DISCUSSION

Due to lack of current research available with regard to cyber aggression and emerging adults, this study

Table 5: Final Models of Hierarchical Regression Analysis Predicting Cyber Victimization and Cyber Bullying Involvement Presented First by Gender and Combined Total Sample

			Targeted Individuals						Aggressors			
		Males N=445			Females N=902			Males N=445			Females N=902	
	b	*SE*	*β*	*b*	*SE*	*β*	*b*	*SE*	*β*	*b*	*SE*	*β*
Age	.04	.015	.13**	.02	.01	.05	.02	.01	.11*	-.003	.01	-.02
Ethnicity	.05	.018	.14**	.04	.01	.10**	.001	.013	.01	.01	.01	.05
Parents Education	.02	.026	.03	.01	.02	.02	-.002	.02	-.01	.004	.01	.014
Self-Esteem	-.16	.06	-.13**	-.20	.04	-.19***	-.10	.04	-.12*	-.02	.02	-.04
Social Capital	.10	.04	.14**	-.002	.03	-.002	.01	.03	.02	-.02	.01	-.04

	Targeted Individuals N=1,347			Aggressors N=1,346		
	b	*SE*	*β*	*b*	*SE*	*β*
Age	.03	.01	.08**	.01	.01	.04
Gender	.02	.04	.02	-.12	.02	-.16***
Ethnicity	.04	.01	.11***	.01	.01	.04
Parents Education	.01	.02	.02	.001	.01	.004
Self-Esteem	-.20	.03	-.17***	-.05	.02	-.07*
Social Capital	.04	.02	.06*	-.002	.01	-.01

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

Table 6: Correlations Table for of Study Constructs for College Students

N=1921	1	2	3	4	5	6	7
1 Age		.08*	-.03	.05	-.02	-.05	-.03
2 Race	.15***		-.09*	.10**	.05	-.08*	-.01
3 ParEdu	-.10*	-.19***		.01	.01	.13***	-.01
4 Victim	.15***	.16***	.01		.36***	-.06	.19***
5 Bully	.11*	.04	-.01	.50***		-.05	.05
6 Social Capital	.07	-.12**	.10*	.10*	.01		-.27***
7 Self - esteem	-.03	.20***	.01	.12**	.11*	-.22***	

Note: Upper triangle is female and lower triangle is male.
*p <. 05, **p < .01, ***p < .001.

first explored prevalence of involvement as victims or perpetrators by gender and ethnicity. Results showed that overall 18.4% (N=316) of the sample experienced victimization at least once and that only 4.4% (N=72) of the entire sample acted as cyberbullies at least once. Although it is possible participants did not answer honestly based on knowledge of socially desirable characteristics, these findings are somewhat supportive of previous research (Walker *et al*., 2011) in terms of victimization within the U.S. colleges and universities. However, prevalence of perpetration was much lower compared to other U.S. studies (Finn, 2004; MacDonald & Roberts-Pittman, 2010) that reported perpetration at nearly 10%. In terms of global comparisons prevalence in this study is quite marginal for both types of cyber aggressive behaviors (Aricak, 2009; Ismail & Kim, 2010).

Researchers have repeatedly found that cyberbullying behaviors peak during early adolescent ages (Hemphill & Heerde, 2014; Wade & Beran, 2011; Williams, 2014). Perhaps such findings explain why emerging adults have not been assessed as closely, as well as the added assumption of being old enough to act with more responsibility and maturity at this developmental stage.

By platforms, an area that educators and university personnel or advisors should take note of is victimization through instant/private messages (1 in 10), cell phones and social networks (1 in 5 each). The majority of college students (if not all) use social networks (Subrahmanyam et al, 2008) and have cell phones and thus sensitivity trainings, orientation warnings, and resource provisions should provide college students with enough awareness to understand it still happens beyond middle and high school. When considering gender, significant differences support previous research as females reported significantly more victimization than their male counterparts. As for cyberbullies, males reported significantly more involvement than females (Oblad, 2012; Raskauskas, 2010; Wade & Beran, 2011; Walrave & Heirman, 2011).

By ethnicity, differences in cyber aggressive behaviors provided interesting results as the Asian group reported significantly more involvement in every platform with cybervictimization and three platforms with cyberbullying (email, instant/private message, other). African-Americans reported the next highest means in terms of reported level of involvement but were not nearly as involved as Asians reported. Future studies should consider a cross-cultural comparative analysis to explore in depth possible reasons as to what it is that leads certain groups to more involvement in cyber aggressive activities than others.

Although the overall r-squared change is low in each hierarchical model, the presence of statistically significant predictors allow for important conclusions to be made that explore how changes in the predictor values associate with the response changes. As shown in Table **5**, under both males and females, having low self-esteem predicts more cybervictimization and more cyberbullying. This finding supports Patchin and Hinduja (2010) and Brighi and colleagues (2012) that more bullying/victimization experiences are linked to lower amounts of self-esteem. Aside from ethnicity, self-esteem was the only significant predictor for females as cybervictims or cyberbullies. For males, social capital significantly predicted cybervictimization. Perhaps this is due to the possibility that opening networking doors, having more networks, or spending more time social networking create more connections and as such, increase risks of cybervictimization.

Implications, Limitations, and Future Directions

Results of this study provide several important implications for the college environment and policies. First, university personnel should note perpetration and victimization online continues to happen, despite lower frequencies in this study. New student orientations or introductory courses may serve as appropriate times to invite emerging adults to help train administrators and other fellow students how to prevent less-desirable interactions, particularly on cell phones, social networks, and private messaging. Second, the current study found low self-esteem was linked to cybervictimization as well as cyberbullying. Although this is not a directional or causal relationship, university leaders and counseling offices can benefit from this finding by prevention through warnings to those who may have low self-esteem previously.

There are important limitations and future directions that should be acknowledged.

First, deciding on which platforms to assess and how to measure them are difficult to do given the myriad of social networking opportunities college students have and the diverse and continuous introduction of new and anonymous sites make it difficult to study in-depth the impact such sites may have (e.g., SnapChat). Second, the main analysis of this study was only able to explain a small portion of variance in cyberbullying and cybervictimization involvement when controlling for demographics, self-esteem, and social capital. Future studies will need to consider other important factors such as self-control, personality characteristics, or moral reasoning. Such measures may be able to add to predicting cyber aggressive involvement and thus provide more information that can be communicated to students early on for prevention.

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