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Exploration of the Cyberbullying Victim/Offender Overlap by Sex

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Abstract

As usage of the Internet has grown to approximately 657 million users worldwide, criminality online has become more prevalent. Termed “cybercrime,” this form of criminal behavior can occur in several different. While cybercrime in general is fairly new comparably to crimes in the physical realm, one of the most recently recognized forms of cybercrime is cyberbullying. The present study will examine the victimoffender relationship. Results indicate that both males and females with lower levels of self-control were more likely to participate in cyberbullying by posting hurtful messages or pictures to Facebook. Second, both sexes were more likely to cyerbullying via Facebook if they had been cyberbullied as well.

Keywords Cyberbullying · Cybercrime · Victimization

As usage of the Internet has grown to approximately 657 million users worldwide (Osugwu, Ogiemien, & Okide, 2010), criminality online has become more prevalent. Termed "cybercrime," this form of criminal behavior can occur in several different. Cybercrimes can be extensions of crimes in the physical world. For example, hacking originated from stealing long distance services (aka phone phreaking) from telephone companies. Today's version of hacking involves unauthorized access of computers and electronic information. Cybercrimes also manifested purely as a result of the efficiency and ease of the Internet. Dissemination of malware (computer viruses) to destroy computer files is a crime that can only be performed online.

While cybercrime in general is fairly new comparably to crimes in the physical realm, one of the most recently recognized forms of cybercrime is cyberbullying. While bullying in the physical world is defined as intentional, aggressive behavior that involves an imbalance of power (Nansel, Overpeck, Pilla, Ruan, Simons-Morton, & Scheidt, 2001); cyberbullying is intentional, aggressive behavior that is performed through electronic means (i.e., computers, cell phones, PDAs) (Hinduja & Patchin, 2008, 2009; Reekman & Cannard, 2009). Cyberbullying can occur in several forms of electronic communication (Hinduja & Patchin, 2008), such as harassment of others in the form of repetitive messages, or the spreading of personal information (aka gossip) about another person. An offender can also participate in "flaming," which is insulting another online user in a public area like a chat room. While cyberbullying can occur in multiple different arenas online, the most common places are social networking websites, email, and chat rooms. Recent studies have determined that cyberbullying is becoming an increasing issue, especially amongst the older adolescent and college student population (Marcum, Higgins, & Ricketts, 2010; Navarro & Jasinski, 2012).

The present study will contribute to the gap in the literature by comparing the experiences of cyberbullying by each sex. Past findings have asserted that males and females experience harassment differently, but the method in which it differs depends on the study. For instance, Marcum (2010) found that 35.2 % of male college freshmen had experienced some form of cyberbullying, compared to 16.0 % of female college freshmen. Yet, the National Children's Home (NCH, 2002) found that females were more likely to be cyberbullied via text messaging compared to males (21 % vs. 12 %); however, females (3 %) and males (5 %) were quite comparable in regard to victimization via email (Holt & Bossler, 2009; Marcum, 2010). There has also been research that examines the participation of the sexes in cybercrime. For instance, Kowalski, Limber and Agatston (2007) found that middle school females in the southwestern and southeastern United States are more likely than boys to report being the receipt of cyberbullying (25 % versus 11 %), as well as initiating cyberbullying as the offender of the behavior (13 % versus 8.6 %).

Traditional bullying (i.e., in the physical realm) indicates that males are more involved in bullying than girls, as males tend to participate in behavior that involves physical aggression (Borg, 1999; Espelage, Bosworth, & Simon, 2000; Seals & Young, 2003). However, females tend to participate in more indirect forms of bullying, such as psychological and emotional harassment and aggression (e.g., gossiping) (Owens, Shute, & Slee, 2000; Simmons, 2002). As cyberbullying involves more forms of indirect harassment which does not involve physical interaction

(Hinduja & Patchin, 2007), it is fair to assume that females would be just as likely to be involved in cyberbullying as males (if not more). Past research has presented several reasons for this assertion. First, females tend to be more verbal than males. As cyberbullying involves verbal communication online rather than physical interaction, it could be a preferred method of cyberbullying by girls and women. Further, females are less confrontational face-to-face (Andreou, 2001), often as a result of cultural constraints and norms. Participating in cyberbullying allows offenders to participate in aggressive and abusive behavior with the protection of a computer screen and does not require activities in the physical realm. Finally, females more often participate in bullying that involves emotional and psychological abuse, which involves gossiping and spreading of information (whether true or untrue) (Owens et al., 2000; Underwood, Galen, & Paquette, 2001).

Victim-Offender Relationship

The second important component of this study is to examine the victim-offender relationship in regard to cyberbullying. The victim-offender relationship is well documented throughout criminological literature (Chang, Chen, & Brownson, 2003; Dobrin, 2001; Jennings, Higgins, Tewksbury, Gover, & Piquero, 2010; Jennings, Tomisich, Gover, & Akers, 2011; Maldonado-Molina, Piquero, Jennings, Bird, & Canino, 2009; Maldonado-Molina, Jennings, Tobler, Piquero, & Canino, 2010; Reingle, Jennings, Maldonado-Molina, Piquero, & Canino, 2011; Reingle, Staras, Jennings, Branchini, & Maldonado-Molina, 2012; & Silver, Piquero, Jennings, Piquero, & Lieber, 2011). Jennings, Piquero and Reingle (2012) performed a meta-analysis of studies examining the victim-overlap and found that 31 of the 37 studies examined provided support for the victim-offender overlap, with the remaining 6 providing at least some amount of support. There appears to be strong support for the victim-offender overlap when it comes to violent behaviors, especially homicide. For example, Broidy, Daday, Crandall, Klar and Jost (2006) found that 57 % of homicide offenders in New Mexico had prior arrests and 50 % of the homicide victims also had prior arrests. Fiegelman, Howard, Xiaoming and Cross (2000) determined that only 5 % of homicide perpetrators were not previously exposed to violence or some form of victimization.

Other studies have indicated that the victim-offender relationship can be explained by demographic variables and deviant lifestyle. Jennings et al. (2010) found that school commitment, parental monitoring, low self-control and sex were predictors of victimization and offending, with low self-control the strongest predictor. However, there were differences in the level that the victim and offender experienced these variables (e.g., the effect of school commitment and parental monitoring was lower in victims), which was also supported by Schreck, Stewart and Osgood (2008) in his study of juvenile offending (low school commitment and attachment to parents were stronger predictors of offending compared to victimization).

Several other studies have also demonstrated a victim-offender relationship in regard to dating violence (Heyman & Smith, 2002; Reingle et al., 2012), between ethnic groups (Caetano & McGrath, 2005; Maldonado-Molina, Reingle, Jennings, & Prado, 2011), and mental health issues (Hiday, 2006; Silver, 2002; Silver, Arseneault, Langlely, Caspi, & Moffitt, 2005). However, Jennings et al. (2012) made special note that there was a need for expanded consideration of the victim-offender overlap for

difference offense types. As mentioned previously, the purpose of this study is consider one of those areas: cyberbullying.

Victim-Offender Relationship of Cyberbullying

This particular study will also contribute to the gap in the literature by comparing the victim and offender overlap in cybercrime by each sex. There is currently a gap in the literature analyzing the victim and offender relationship of cyberbullying. However, the little amount available explored the relationship of the offender to the victim. For example, Wolak, Mitchell and Finkelhor (2006) utilized the Youth Internet Safety Survey to determine that 43 % of persons harassed online knew their aggressor. Kowalski et al. (2007) also found in their study that approximately 50 % of the respondents in their study knew their aggressors. Further, Ybarra, Mitchell, Finkelhor and Wolak (2007) investigated the experiences of youth online and offline with bullying, finding a small percentage (13 %) reported that the same harasser bullied them on- and offline.

Cyberbullying, much like bullying in the physical realm, can have varying effects on the victim and perpetrator. Victims can exhibit feelings of depression, stress, anxiety, and suicidal thoughts (Ybarra & Mitchell, 2004). Further, Kowalski, Limber and Agatston (2008) argue that the effects of cyberbullying can even be worse than physical altercations due to the continued victimization as a result of reposting of harassing messages or photos on the Internet in multiple places. Sbarbaro and Smith (2011) found that of the 84 % of participants in their study who reported being cyberbullied, 22.6 % stated it was a big problem for them and caused them extreme physical and emotional reactions.

Targets of cyberbullying often do not report incidences of abuse as they are afraid parents will take the mediums where the bullying is occurring, as they are valued socialization commodities (Li, 2006). In other words, a bullied teen will fear a parent will take away Internet usage or a cell phone to prevent continued harassing Facebook messages or texts. There has even been an assertion that social networking websites cause a "suicide contagion effect" (Zayas, 2006), a term that indicates individuals who are contemplating suicide are more likely to act if they see others have published their suicide on social networking websites. We have seen the tragic stories of Phoebe Prince and Megan Meier in the media, two girls who took their own lives as a result of physical and cyberbullying.

The effect of cyberbullying on perpetrators is drastically different than on the victims. These individuals often feel vindicated, pleased, and proud of their behavior. By abusing someone else and feeling dominant, they often feel compensated for victimization they have felt. Patchin and Hinduja (2011) found that offenders of cyberbullying are often fueled by various forms of strain, as well as peer aggression. Hinduja and Patchin (2008) also found that computer proficiency and time spent online were both positively related to committing the offense of cyberbullying.

Present Study

As stated previously, there is a gap in the literature that explores the differences in online bullying behaviors by males and females. Further, there is a gap in the

literature exploring the victim and offender overlap. The present study will explore the differences in male and female cyberbullying, as well as the victim-offender relationship experienced by each sex. The next section will describe the [Methodology](#) used in this study, followed by the [Discussion](#) of the results.

Methodology

Sample

The sample for this study was obtained through online survey administration at a large, southeastern public university. The survey was sent to 19,445 students, with a final 5.9 % response rate ($n=1139$). There is approximately an even split in regards to the percentage of males and females who attend the university with the average age of student being 21 years old. Sixty-four percent of the students are white and 26 % black. The majority of the students (94 %) originate from the state the university is located. Students received three waves of invitations to participate in the survey, with 7 days between each invitation. One of the limitations of using an online survey is the potential low response rate (Dillman, 2007); however, due to the sheer number of the population, it was the most cost efficient choice. The final sample size is more than large enough for a study of this magnitude.

Measures

A number of measures were used in this study. The dependent measure used was “In the past year, I have used Facebook to post information with the intent to hurt others”. The respondents’ perpetration of this behavior, the item was dichotomized as no (0) and yes (1).

Several independent measures were used in this study. The first three were utilized in the form of a scale and were demonstrated to be predictors of criminal behavior in similar studies (Higgins, Jennings, Tewksbury, & Gibson, 2009; Higgins, Ricketts, & Vegh, 2008; Holtfreter, Reisig, Piquero, & Piquero, 2010; Nofziger, 2009). Parent attachment was captured using three items: “I can talk about anything with my parents”, “My parents always trust me”, “My parents always praise me when I do well”. The respondents indicated their responses using a 5-point scale anchored by none of the time (1) and all of the time (5). Higher scores on the scale indicated greater attachment. The internal consistency was acceptable at 0.70.

School commitment was captured using three items: “I try hard in school”, “Education is important to me”, “I complete my assignments on time”. The respondents indicated their response using 5-point scale anchored by strongly disagree (1) and strongly agree (5). Higher scores on the scale indicated greater school commitment. The internal consistency was acceptable at 0.80.

Low self-control was captured using the 24-item Grasmick, Tittle, Bursik, Robert and Arneklev (1993) scale. The responses to items were captured using a 5-point scale anchored by strongly disagree (1) and strongly agree (5). Higher scores on the scale indicated low levels of self-control. The internal consistency was acceptable at 0.84.

The number of hours that the respondents spent using twitter, social network sites, or e-mailing was captured, using a 3-point scale that was anchored by 0 to 5 h (1) to 11 or more hours (3). Higher scores on each of the measures indicated more hours. The number of friends that respondents has that use these communication devices while on the Internet was captured using a 4-point scale that was anchored by none of them (0) and all of them (4). Age was an open-ended measure. Sex was dichotomized as female (1) and male (0). Renting an apartment (1) and dormitory living (0) was dichotomized.

The final independent measure for this study was, "In the past year, others have posted information online with the intent to hurt me in following ways: posted gossip about me". The respondents indicated their response using a 5-item response category that is anchored by never (1) to 7+ times (5). The response categories were dichotomized because of skewness in the measure.

Analysis Plan

The analysis plan takes place in a series of phases. The first phase is a presentation of the descriptive statistics for males and females. In this phase, t-tests were also performed to determine if there are biological sex differences among the measures. The second phase is a presentation of the multivariate statistics. The multivariate statistics for this study is logistic regression. This analytic technique is appropriate because of the dichotomous dependent measures. The most interpretable portion of logistic regression is the odds ratios or Exp(b) (Menard, 2002). Because the purpose of this study is sex differences, the Paternoster, Brame, Mazerolle and Piquero (1998) z-score will be used explore differences across the parameters.

Results

Step 1

Table 1 presents the descriptive statistics for the measures of this sample. The average age for males is 20.44 and 20.31, and age is not different across the sexes. Seventy-one percent of the male sample is white, and 60 % of the female sample is white, and this distribution is statistically different (t -test = -3.21). Sixty-eight percent of the male sample rents an apartment rather than lives in a dorm, and 63 % of the female sample rents an apartment rather than lives in a dorm. The average score of the parental attachment measure is 11.33 for males and 11.76 for females, and these are statistically significant ($t=2.27$). The average score of the school commitment measure for males is 12.82 and 13.60 for females, and these differences are statistically significant ($t=5.86$). The average score of the low self-control measure for males is 60.44 and 57.22 for females and the difference is statistically significant ($t=-3.94$). The average number of hours that the respondents used twitter or social network sites was 0 to 5 h per week for males and females. A statistically significant sex difference exists for number of hours for social network sites ($t=2.25$). The average number of friends that the respondents had that used twitter was a few of them for females, and

Table 1 Descriptive statistics and T-tests

Measure	Male mean	Standard deviation	Female mean	Standard deviation	t-test
Age	20.44	1.72	20.31	1.72	1.11
White	0.71	-	0.60	-	3.21**
Renting	0.68	-	0.63	-	1.47
Parent attachment	11.33	3.00	11.76	2.73	-2.27*
School commitment	12.82	2.24	13.60	1.88	-5.86**
Low self-control	60.44	12.59	57.22	11.55	3.94**
Social network hours	1.62	0.73	1.74	0.78	-2.25*
Social network friends	3.22	0.85	3.34	0.73	-2.26*
Gossip	0.08	-	0.13	-	-2.44*
Facebook to hurt someone	0.08	-	0.09	-	-0.06

* $p < 0.05$, ** $p < 0.00$

none of them for males and the differences are statistically difference ($t=5.02$). The average number of friends that the respondents had that used social network sites was half of them for both males and females but there is a significant difference ($t=2.26$). Nine percent of the female sample used Facebook to post to hurt someone, and 8 % of the male sample used Facebook to post hurt someone and there are no sex differences. Eight percent of the male sample had someone else post gossip about them, and 13 % female sample had someone else post gossip about them. Overall, the skewness and kurtosis for all of the measures did not indicate that the data was non-normal.

Step 2

Table 2 shows the logistic regression analysis of the victim of posting gossip and posting to Facebook to hurt someone by sex. For males, three measures are statistically significant. First, as self-control goes down by one unit the likelihood of posting to Facebook to hurt someone goes up by 1.07 times. Second, as the number of hours males spend on social network sites increases by one unit, the likelihood of posting to Facebook to hurt someone goes up 2.34 times. Third, male respondents who had gossip posted about them were 3.20 times more likely to post to Facebook to hurt someone.

For females, three measures are statistically significant. First, as self-control goes down by one unit the likelihood of posting to Facebook to hurt someone goes up by 1.05 times. Second, as the number of friends that use social network sites increases, the likelihood of posting to Facebook to hurt someone goes up by 1.81 times. Third, female respondents who had gossip posted about them were 3.65 times more likely to post to Facebook to hurt someone.

The z-scores show that the number of social network hours, number of social network friends, and gossip are statistically different. Specifically, for males, the posting of Facebook to hurt someone appears to be driven by the number of hours

Table 2 Logistic regression of using Facebook to hurt someone by biological sex

Measure	b	Male S.E.	Exp(b)	b	Female S.E.	Exp(b)	z-score
Age	-0.17	0.22	0.84	-0.11	0.12	0.90	
White	0.28	0.60	1.32	0.05	0.33	1.05	
Renting	0.70	0.77	2.02	0.47	0.39	1.60	
Parent attachment	-0.11	0.10	0.90	0.03	0.06	1.04	
School commitment	-0.00	0.14	0.99	0.01	0.09	1.01	
Low self-control	0.07*	0.03	1.07	0.05*	0.02	1.05	
Social network hours	0.85*	0.36	2.34	0.27	0.23	1.31	
Social network friends	-0.06	0.34	0.94	0.59*	0.27	1.81	
Gossip	1.16*	0.53	3.20	1.29**	0.32	3.65	
Model diagnostics:				Model diagnostics:			
Chi-square: 25.60**				Chi-square: 43.37**			
-2 log likelihood: 104.43				-2 log likelihood: 294.74			
Cox and Snell R-square: 0.12				Cox and Snell R-square: 0.08			
Nagelkerke R-square: 0.25				Nagelkerke R-square: 0.17			

* $p < 0.05$, ** $p < 0.00$

spent on social network sites. For females, posting to Facebook to hurt someone appears to be driven by the number of social network friends whether they have been victims of gossip being posted about them.

Discussion

Our results indicated important findings, especially that the sexes shared two of the same predictive factors. First, both males and females with lower levels of self-control were more likely to participate in cyberbullying by posting hurtful messages or pictures to Facebook. Persons with low self-control are noted for being impulsive and risky, so it is not surprising that these individuals would poste nasty comments about others without stopping to consider the repercussions. Second, both sexes were more likely to cyberbullying via Facebook if they had been cyberbullied as well. This is an important contribution to the literature, confirming our assumption that victimization by bullying can cause a person to act out in a similar manner to retaliate for that hurt and loss of control. While being bullied can be hurtful, bullying someone else can cause the same individual to feel powerful and vindicated.

The final significant predictors for each sex were similar in nature. First, males who spent more hours utilizing social networking websites, such as Facebook, were more likely to cyberbully by posting gossip to Facebook about other peers. We could assert from this finding that more time spent online gives male users a comfort and confidence with their Internet "persona," therefore encouraging them to participate in this form of bullying. In regard to females, an increased number of friends who used social networking websites increased the respondent's likelihood of participating in cyberbullying via posting gossip to Facebook. This is an extremely interesting finding, as it may confirm

the old adage “birds of a feather flock together.” In other words, females may find confidence in being a part of a large peer group online, especially if those girls are participating in cyberbullying as well. If she feels as if she has support from her peers, she will feel justified in participating in bullying of someone less popular.

These findings are extremely important for policy implications. While the results indicated that females were slightly more likely than males to participate in cyberbullying via Facebook based on the predictive factors discussed, males were not far behind. As indicated earlier, females are more likely to participate in indirect forms of bullying as it is non-confrontational. However, these findings can help us assert that as the majority of our younger generation is becoming Internet savvy, both sexes are taking advantage of the Internet as a new medium for bullying. We would suggest educational programs implemented into the middle and high schools to discuss the effect of bullying, whether in the physical or cyber realm. Further, discussion of the tragic stories of bullied teenagers who turned to suicide or harming themselves as a result of bullying may stress the importance of this matter.

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