Psychiatric Symptomatology as a Predictor of Cyberbullying among University Students

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Abstract

Problem Statement: The internet as online technology has become one of the most popular communication channels among university students worldwide. Young adults and university students have become sophisticated users of technology and often lead the way in adapting new technologies for everyday use. Sometimes their technological savvy can become a gateway, exposing them to a host of sordid activities, including pornography, drugs, violence, and cyberbullying. Although online technologies provide numerous benefits (i.e., learning and teaching activities), online technology also has a potentially 'dark side,' as it can be used for harm. The current study focuses on the harmful consequences of one type of misuse of online technology: cyberbullying.

Purpose of Study: The purpose of the present study was to investigate the relations between cyberbullying and psychiatric symptoms, and to investigate which symptoms predicted cyberbullying.

Methods: This study was cross-sectional and correlational research. A demographic information form, questions about cyberbullying, and a Symptom Check List-90-Revised Form were administered to 695 undergraduate university students (247 males and 448 females).

Findings and Results: Data revealed that there are significant differences between "non-bully-victims," "pure-victims," "pure-bullies," and "bully-victims," according to the self-reported psychiatric symptom scores. The non-bully-victim group reported significantly less psychiatric symptoms than pure-victims and bully-victims. The path analysis revealed that hostility and psychoticism significantly predicted cyberbullying. Additionally, current cyberbullying could predict the possibility of future cyberbullying. Nearly half of the participants in the current study reported that they pretended (at least one time) to be someone else on the internet or cell phone. Additionally, a significant relation between cyberbullying and anonymity was found. Interestingly, although no gender differences were found in relation to victimization, males engaged in cyberbullying and pretended to be someone else in cyberspace significantly more frequently than females. Additionally, males were more likely than females to endorse that they would engage in cyberbullying in the future.

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Conclusions and Recommendations: The current study reported that some psychiatric symptoms were significant predictors of cyberbullying. The relation of psychoticism and hostility to cyberbullying particularly should be investigated in more detail in future research.

Keywords: Cyberbullying, cybervictimization, psychiatric symptoms, university students.

The internet as online technology has become one of the most popular communication channels among university students worldwide (Hong, Li, Mao, & Stanton, 2007). Young adults and university students have become sophisticated users of technology and often lead the way in adapting new technologies for everyday use. Sometimes their technological savvy can become a gateway, exposing them to a host of sordid activities including pornography, drugs, violence, and cyberbullying (Agatston, Kowalski, & Limber, 2007). Although online technologies provide numerous benefits (i.e., learning and teaching activities), online technology also has a potentially 'dark side,' as it can be used for harm (Campbell, 2005). The current study focuses on the harmful consequences of one type of misuse of online technology: cyberbullying.

The consequences of cyberbullying are serious and far reaching, affecting both individuals and the larger social milieu (Finn & Banach, 2000). Teich and colleagues identified several forms of online abuse, including impersonation and fraud. They also noted that cyberbullying can occur when individuals send harmful spam, hate mail, and when they engage in criminal activities (e.g., stealing another's identity) (Cited in Beran & Li, 2005). The widespread consequences of cyberbullying have only recently attracted the attention of researchers and mental health experts. Although cyberbullying is a method of harassment by means of virtual reality, its effects are anything but virtual; they are real and have potentially serious negative consequences (Arıcak, 2007).

What is Cyberbullying?

Three noteworthy operational definitions of cyberbullying have emerged in the recent literature. According to Belsey (2008, p.1), "Cyberbullying is the use of information and communication technologies to support deliberate, repeated, and hostile behavior by an individual or group that is intended to harm others." Willard (2007, p.1) operationalizes the term as, "a way of being cruel to others by sending or posting harmful material or engaging in other forms of social aggression using the internet or other digital technologies." Finally, according to Strom and Strom (2005, p.21), cyberbullying is defined simply as "an electronic form of peer harassment."

The Mental Health Repercussions of Cyberbullying

Due to the extensive implications and negative consequences that cyberbullying behaviors generally have on victims, cyberbullying should be considered a widespread mental and public health issue (David-Ferdon & Hertz, 2007). Indeed, recent research suggests that cyberbullying is related to behavioral and psychosocial problems including anger, aggression, and rule-breaking behaviors (Patchin & Hinduja, 2006; Ybarra, Espelage, & Mitchell, 2007; Ybarra & Mitchell, 2007).

According to Ybarra (2004, p.247), "internet harassment is an important public mental health issue affecting youth today." Ybarra's research has found that young, regular internet users, who report DSM IV-like depressive symptomatology, are significantly more likely to concurrently report being targets of internet harassment (Ybarra, 2004). Similarly, Harman, Hansen, Cochran, and Lindsey (2005) reported that children who misrepresent themselves on the internet had less well-developed social skills, lower levels of self-esteem, and higher levels of social anxiety and aggression.

According to McKenna and Bargh (2000), the ability to anonymously interact on the internet contributes to the user's lower self-awareness. Anonymity may also stimulate bullies to react impulsively and aggressively toward other individuals online.

There are numerous researchers emphasizing the relationship between traditional bullying and mental health problems, including depression, anger, hostility, psychosis and so on (Campbell & Morrison, 2007; Gibb & Alloy, 2006; Houbre, Tarquinio, Thuillier, & Hergott, 2006; Lataster et al., 2006; Klomek, Marrocco, Kleinman, Schonfeld, & Gould, 2007; Seigne, Coyne, Randall, & Parker, 2007). As described previously, although some researchers study cyberbullying and the resulting behavioral problems, the growing problem of cyberbullying is an epidemic that has not as yet received the attention it deserves and remains virtually absent from the research literature (Campbell, 2005). The current study is a first step in contributing to this burgeoning and important area of research.

It is clear that there exists a global problem with cyberbullying. As a result of growing numbers of incidents reported in the United States, Canada, Japan, Scandinavia, Turkey and the United Kingdom, Australia and New Zealand, research in this area is imperative for informing effective prevention and intervention programs (Arıcak, Siyahhan, Uzunhasanoğlu et al., 2008; Campbell, 2005; Erdur-Baker & Kavsut, 2007; Li, 2006; 2007; National Children's Home, 2008).

Specifically, the purpose of the present study was to investigate the relations between cyberbullying and psychiatric symptoms, and to investigate which symptoms predicted cyberbullying. The extant literature is replete with studies that cite the occurrence of cyberbullying (Anderson & Sturm, 2007; Beran & Li, 2005; Campbell, 2005; Li, 2005; 2006; 2007; Strom & Strom, 2005). The focus of the current study was to extend this extant research and examine the interaction between cyberbullying and psychiatric symptoms.

Method

Participants

Participants were 695 undergraduate university students (247 males and 448 females) from 15 different programs in the Faculty of Education at Selçuk University, Turkey. Students' ages ranged from 18 to 22 years ($M = 19.34$, $SD = 1.19$). One hundred and ninety-nine students were freshmen, 232 were sophomores, 129 were juniors, and 135 were seniors. Low, middle, and high socioeconomic status was represented by 2.3%, 96.1%, and 1.6% of the participants, respectively. A convenience

sampling method was used to recruit participants. All participants indicated they were regular computer and internet users.

Procedure

Surveys were administered after class hours in classrooms from October to December 2007. A faculty member in the Faculty of Education at Selçuk University (who has a PhD in counseling) administered the surveys and answered participants' questions about the study. Prior to completing the surveys, participants were informed about the study and voluntarily signed a consent form to participate. The survey required approximately 30 minutes to complete. All data were coded and entered in an SPSS file by the same faculty member.

Instruments

The survey consisted of three sections. The first section consisted of five demographic questions regarding sex, age, department, class year, and socioeconomic level. The second section consisted of five questions specifically about cyberbullying. Finally, the third section included items from the Symptom Check List-90-Revised (SCL-90-R; Derogatis, Lipman, & Covi, 1973).

Questions about Cyberbullying. After the first section of the survey, participants were provided with an operational definition of cyberbullying. Belsey's (2008) definition was given. Additionally, a set of examples of cyberbullying were provided. Agatston et al. (2007) used a similar method in their study. Following the definition and examples, the following questions were provided and participants rated their subjective answers on a varying scale: Based on the definition of cyberbullying provided above (1) "Have you ever engaged in cyberbullying before today?" (1-Never, 2-One time, 3-Between two-four times, 4-Five or more times). (2) "Have you ever been exposed to cyberbullying?" (1-Never, 2-One time, 3-Between two-four times, 4-Five or more times). (3) "Would you engage in cyberbullying as a bully in the future?" (1-Yes, 2-I am not sure, 3-No). (4) "Have you ever pretended to be someone else on the internet or cell phone?" (1-Never, 2-One time, 3-Between two-four times, 4-Five or more times). (5) "Would you pretend to be someone else on the internet or cell phone in future?" (1-Yes, 2-I am not sure, 3-No).

Because the items require ordinal response categories, only content validity was examined and reported in this study. Two expert reviewers with PhDs knowledgeable about cyberbullying examined the items for ambiguity and the overall quality of the instrument. The language of the instruments was Turkish.

The Symptom Check List-90-Revised (SCL-90-R). The Symptom Checklist 90 (SCL90) is a 90-item self-report symptom inventory, developed by Derogatis et al. (1973) that was designed primarily to reflect the psychological symptom patterns of psychiatric and medical patients. It was originally developed for use in the USA. Validity and reliability analyses have been reported in several large-scale investigations (Derogatis & Cleary, 1977ab; Derogatis, Rickels, & Rock, 1976). The revised version of the SCL90 is scored and interpreted in terms of the following nine primary symptom dimensions: (1) Somatization (SOM), (2) Obsessive-Compulsive

(O-C), (3) Interpersonal Sensitivity (INT), (4) Depression (DEP), (5) Anxiety (ANX), (6) Hostility (HOS), (7) Phobic Anxiety (PHOB), (8) Paranoid Ideation (PAR) and (9) Psychoticism (PSY). An overall distress index can also be formed based on all 90 items: the Global Severity Index (GSI) (Bonicatto, Dew, Soria, & Seghezzo, 1997). All 90 items were administered in the current survey.

Items were printed on two sides of a single sheet. Instructions, which were also printed on the sheet, require the examinee to indicate on a Likert scale of 0-4 (i.e., not at all, a little bit, moderately, quite a bit, and extremely), the degree to which each item has caused discomfort. Higher scores indicate greater severity (Derogatis, 1975).

SCL-90-R was translated and adapted to Turkish by Dağ (1991) and Kılıç (1991). The test-retest reliability coefficients ranged between .75 and .87 for the subscales, and Cronbach alpha coefficients ranged between .64 and .85 for the subscales. A Cronbach alpha coefficient for the overall scale was .96 (Türkbay, Erman, Cöngöloğlu, & Söhmen, 2003).

Data Analyses

Descriptive and inferential statistics were used to examine the relations and interaction between cyberbullying and self-reported psychiatric symptoms. The statistical packages SPSS 15 for Windows (2006) and AMOS 7.0 (Arbuckle, 2006) were used to analyze the data. Frequencies, percentages, mean, standard deviation, chi-square, and Pearson Correlation coefficients were used for descriptive statistics. The Mann-Whitney U test was performed to examine sex differences in reported cyberbullying. GLM (General Linear Model) MANOVA was used to test the interaction and differences between sex and cyberbullying affiliation according to psychiatric symptoms. The path analysis in terms of structural equation modeling was performed to examine the predictive power of psychiatric symptoms on cyberbullying.

Findings and Results

Descriptive Statistics

In the overall sample (N= 695), 19.7% of students in the sample reported engaging in cyberbullying at least one time, and 54.4% of the students reported being victims of cyberbullying at least once in their lifetime. Of the 19.7% of respondents who reported engaging in cyberbullying at least one time, 2% (n = 14) were identified by the authors as a "pure-bully"; that is, someone who is a perpetrator of cyberbullying but has never been bullied. The other 17.7% of the 19.7% (n = 123) were labeled as "bully-victims" and reported being both perpetrators and victims of cyberbullying. In the sample, 36.7% of the students (n = 255) were labeled as "pure-victims" who never reported perpetrating cyberbullying but indicated they were bullied. Another 43.6% of students (n = 303) reported that they had never engaged in or been exposed to cyberbullying (i.e., "non-bully-victims").

Another 45.5% of the sample (n = 316) reported that they had at one time or another pretended to be someone else on the internet or cell phone. Analyses revealed a significant relation between cyberbullying and pretending to be someone else on the internet (χ^2 (3) = 51.55, p = .000). That is, 64.3% of the pure-bullies reported that they perpetrated by acting as if they were someone else. Similarly, 72.4% of the bully-victims cyberbullied others by pretending to be someone else.

When participants were asked if they would engage in cyberbullying in the future, 1.2% answered "yes," 15.8% answered "I am not sure," and 83% answered "no."When asked if they would pretend to be someone else on the internet or cell phone in future, the respondents reported "yes" (7.6%), "I am not sure" (29.6%) and "no" (62.7%).

Table 1 provides an analysis of the psychiatric symptoms reported by the respondents and reveals that the mean of the Global Severity Index (GSI) for the group was 1.16. The mean of the Obsessive-Compulsive scores was 1.55 at the highest point, and the mean of Phobic Anxiety was at a low of 0.76, representing the lowest mean score. Table 1 lists the means and standard deviations of the psychiatric symptoms reported by males and females.

Table 1

Mean and Standard Deviations for SCL-90-R

SCL-90-R Subscales	Male (n = 247)	Female (n = 448)	General(N = 695)
	M(SD)	M(SD)	M(SD)
Somatization (SOM)	0.91(.65)	1.12(.74)	1.04(.72)
Obsessive-Compulsive (O-C)	1.42(.73)	1.61(.73)	1.55(.74)
Interpersonal Sensitivity (INT)	1.25(.77)	1.46(.81)	1.39(.80)
Depression (DEP)	1.10(.72)	1.41(.81)	1.30(.79)
Anxiety (ANX)	0.90(.64)	1.12(.75)	1.04(.72)
Hostility (HOS)	0.98(.77)	1.00(.81)	0.99(.79)
Phobic Anxiety (PHOB)	0.61(.60)	0.85(.70)	0.76(.67)
Paranoid Ideation (PAR)	1.17(.74)	1.36(.80)	1.29(.78)
Psychoticism (PSY)	0.85(.66)	0.93(.71)	0.90(.69)
Global Severity Index (GSI)	1.04(.59)	1.23(.65)	1.16(.64)

Significant correlations emerged among all of the SCL-90-R subscales (p < .001). Correlation coefficients range between .56 and .90. All subscales were highly correlated with the GSI. Correlation coefficients among the subscales are reported in Table 2.

Table 2

Correlations between Subscales of SCL-90-R

	SOM	O-C	INT	DEP	ANX	HOS	PHOB	PAR	PSY	GSI
SOM	1.00	.65*	.56*	.66*	.72*	.57*	.58*	.58*	.63*	.80*
O-C		1.00	.73*	.77*	.70*	.56*	.64*	.69*	.71*	.85*
INT			1.00	.81*	.72*	.63*	.70*	.73*	.74*	.86*
DEP				1.00	.80*	.65*	.69*	.73*	.75*	.90*
ANX					1.00	.70*	.75*	.70*	.77*	.89*
HOS						1.00	.56*	.66*	.65*	.76*
PHOB							1.00	.64*	.66*	.79*
PAR								1.00	.74*	.83*
PSY									1.00	.87*
GSI										1.00

* P< .001

Inferential Statistics

The data were examined for normality and multicollinearity using AMOS 7.0 (Arbuckle, 2006). There were no missing data. Skewness and kurtosis values, and also the observations farthest from the centroid (Mahalanobis distance) showed that multivariate distributions were normal, and there were no significant outliers. Correlations between the variables (r < .90) showed that there was no multicollinearity (Tabachnick & Fidell, 2007).

Sex Differences in Cyberbullying

The Mann-Whitney U test was performed to examine sex differences in reported cyberbullying. This statistic was selected because the data are ordinal (1-Never, 2-one time, 3-between two-four times, 4-five or more times/1-Yes, 2-I am not sure, 3-No).

Results revealed significant differences between males and females with regard to cyberbullying and pretending to be someone else on the internet and cell phone. Males (*M* = 1.53, *SD* = .96) engaged in cyberbullying significantly more frequently than females (*M* = 1.28, *SD* = .73), (Mann-Whitney U = 48405.50, *Z* = -3.94, *p* = .000). Males (*M* = 1.87, *SD* = 1.00) were more likely than females to pretend to be someone else on the internet (*M* = 1.67, *SD* = .93), (Mann-Whitney U = 49411.50, *Z* = -2.58, *p* = .010). No significant difference between males and females with regard to being victims of cyberbullying were identified (Mann-Whitney U = 53257.00, *Z* = -.87, *p* = .385).

An examination of participants' attitudes about the likelihood that they will engage in cyberbullying in the future revealed that males (*M* = 2.72, *SD* = .50) are more likely than females to report that they will possibly perpetrate as cyberbullies

again in the future (*M* = 2.88, *SD* = .34),* (Mann-Whitney U = 47563.00, *Z* = -4.71, *p* = .000). Similarly, males (*M* = 2.48, *SD* = .66) were more likely than females (*M* = 2.59, *SD* = .61), * (Mann-Whitney U = 50631.00, *Z* = -2.18, *p* = .030) to pretend to be someone else and be a cyberbully in the future.

Psychiatric Symptom Differences between Non-Bully-Victim, Bully, Victim, and Bully-Victim Group (Cyberbullying Affiliation)

GLM (General Linear Model) MANOVA results show that there are significant differences between "non-bully-victims," "pure-victims," "pure-bullies," and "bully-victims," according to the self-reported psychiatric symptom scores (Λ = .91, *F* = 2.26, *Hypothesis df* = 30, η^2 = .032, *p* = .000). There was no significant interaction between sex and cyberbullying affiliation on psychiatric symptoms (Λ = .95, *F* = 1.26, *Hypothesis df* = 30, η^2 = .018, *p* = .159). A Bonferroni multiple comparison test was performed to explore specific differences between groups.

GLM MANOVA and Bonferroni tests show that non-bully-victims (*M* = .90, *SD* = .65) self-report significantly less somatization than pure-victims (*M* = 1.16, *SD* = .75) and bully-victims (*M* = 1.13, *SD* = .72), (*F* (3, 691) = 7.64, *p* = .000). Non-bully-victims (*M* = 1.45, *SD* = .72) self-report significantly less obsessive-compulsive symptoms than pure-victims (*M* = 1.62, *SD* = .74), (*F* (3, 691) = 3.15, *p* = .024). Non-bully-victims (*M* = 1.20, *SD* = .77) showed significantly less depression symptoms than pure-victims (*M* = 1.39, *SD* = .80), (*F* (3, 691) = 2.92, *p* = .033). Non-bully-victims (*M* = .93, *SD* = .70) self-reported significantly less anxiety than both pure-victims (*M* = 1.12, *SD* = .71) and bully-victims (*M* = 1.14, *SD* = .71), (*F* (3, 691) = 4.38, *p* = .005). Non-bully-victims (*M* = .90, *SD* = .79) self-reported significantly less hostility than bully-victims (*M* = 1.21, *SD* = .82), (*F* (3, 691) = 5.17, *p* = .002). Non-bully-victims (*M* = .67, *SD* = .64) reported significantly less phobic anxiety than pure-victims (*M* = .84, *SD* = .70), (*F* (3, 691) = 4.20, *p* = .006).

Non-bully-victims (*M* = 1.16, *SD* = .74) reported significantly less paranoid ideation than both pure-victims (*M* = 1.37, *SD* = .78) and bully-victims (*M* = 1.42, *SD* = .84), (*F* (3, 691) = 4.77, *p* = .003). Non-bully-victims (*M* = .83, *SD* = .66) self-reported significantly less psychotic symptoms than bully-victims (*M* = 1.04, *SD* = .77), (*F* (3, 691) = 3.55, *p* = .014). Finally, no significant differences between groups for interpersonal sensitivity (*F* (3, 691) = .79, *p* = .497) were found.

Structural Equation Modeling: Psychiatric Symptoms as Predictors of Cyberbullying

To examine the predictive power of psychiatric symptoms on cyberbullying, a path analysis using structural equation modeling was performed using AMOS 7.0 (Arbuckle, 2006). Path analysis is a method used to evaluate a theoretical model with direct and possibly indirect effects between exogenous and endogenous variables. Although path analysis and multiple regression analysis are similar methods, path

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* The mean for females is higher than the mean for males because the answers were reverse coded. The item was coded as Yes =1, I am not sure = 2, and No = 3. Thus, the lower mean indicates a higher possibility.

analysis provides a better framework than multiple regression for specifying a particular theoretical model regarding the relationship among a set of exogenous and endogenous variables (Kline, 2005; Loehlin, 2004).

As seen in the Figure 1, all psychiatric symptoms on the SCL-90-R were considered exogenous (predictor/independent) variables, and engaging in cyberbullying (CB), exposure to cyberbullying and the possibility of engaging in cyberbullying in future (future CB) were entered as endogenous (outcome/dependent) variables. All variables were observed variables. Single-headed arrows in the path diagram illustrate the direction of the effect of one variable on another; the number associated with each of the single-headed arrows is the path coefficient. The curved two-headed arrows connecting two variables are correlation coefficients between independent variables. Circles represent errors in the prediction of the endogenous variables (Kline, 2005; Loehlin, 2004).
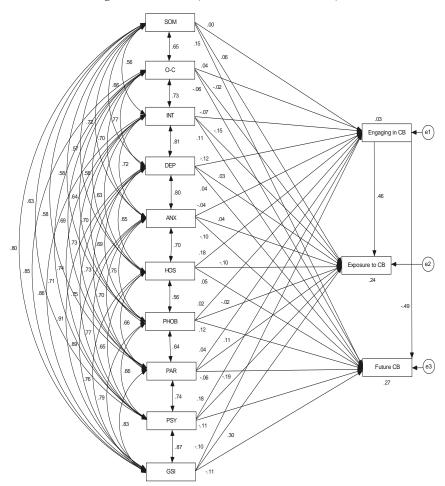

Figure 1. Path Analysis: Psychiatric Predictors of Cyberbullying

As Hu and Bentler (1999) and Tabachnick and Fidell (2007) suggested, chi-square, RMSEA, NFI, TLI, and CFI were selected to test the model's fit. The model fit indices all demonstrated an excellent fit, indicating that there was sufficient power in the sample size (χ^2 = .388, *df* = 1, *p* = .533; RMSEA = .000; NFI = 1.00; TLI = 1.00; CFI = 1.00). Maximum Likelihood method in a general linear model context was used in the analysis.

Psychiatric Symptoms Predicting Engaging in Cyberbullying

The path model revealed that hostility (HOS) and psychoticism (PSY) significantly predicted engaging in cyberbullying (β = .18, *p* = .006, and β = .18, *p* = .037, respectively). In other words, when hostility and psychoticism increased by one standard deviation, the likelihood that a participant would engage in cyberbullying correspondingly increased by .18 standard deviations (in terms of standardized regression weights). Likewise, when hostility increased by one point, engaging in cyberbullying increased .19 points, and when psychoticism increased by one point, engaging in cyberbullying increased .21 points (in terms of unstandardized regression weights).

Psychiatric Symptoms Predicting Exposure to Cyberbullying

Interpersonal Sensitivity (INT) and psychoticism (PSY) significantly predicted exposure to cyberbullying (β = -.15, *p* = .042, and β = -.19, *p* = .011, respectively). Further, when interpersonal sensitivity increased by one standard deviation, exposure to cyberbullying decreased by .15 standard deviations, and when psychoticism increased by one standard deviation, exposure to cyberbullying decreased by .19 standard deviations (in terms of standardized regression weights). Correspondingly, when interpersonal sensitivity increased by one point, exposure to cyberbullying decreased .21 points, and when psychoticism increased by one point, exposure to cyberbullying decreased .31 points (in terms of unstandardized regression weights).

Psychiatric Symptoms Predicting Possibility of Engaging in Cyberbullying in Future

Phobic anxiety (PHOB) and somatization (SOM) significantly predicted the likelihood of being a cyberbully in future (β = .12, *p* = .040, and β = .15, *p* = .032, respectively).* Further, when phobic anxiety increased by one standard deviation, the likelihood of being a cyberbully in the future decreased by .12 standard deviations, and when somatization increased by one standard deviation, the likelihood of being a cyberbully in future decreased by .15 standard deviations (in terms of standardized regression weights). Correspondingly, when phobic anxiety increased by one point, the likelihood of being a cyberbully in the future decreased .073 points, and when somatization increased by one point, the likelihood of being a cyberbully in the future decreased .088 points (in terms of unstandardized regression weights).

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* Although β has positive value, the direct effect is negative because the answers were reverse coded. The answers were coded as Yes = 1, I am not sure = 2, and No = 3. Therefore, the higher score reveals a lower possibility of engaging in the behavior (see Method/Instruments).

In addition to psychiatric symptoms, previous engagement in cyberbullying predicted the likelihood of being a cyberbully in the future (β = -.49, p = .000)** and being a cybervictim (β = .46, p = .000). In other words, as previous cyberbullying increased by one point, the likelihood of engaging in cyberbullying in the future increased .24 points, and cybervictimization increased .62 points (in terms of unstandardized regression weights).

Conclusions and Recommendations

Descriptive statistics demonstrate that there are more cybervictims than cyberbullies, a finding that is consistent with previous studies (ANCOMM, 2008; Kowalski & Limber, 2007; Li, 2006; Raskauskas & Stoltz, 2007). Nearly half of the participants in the current study reported that they pretended (at least one time) to be someone else on the internet or cell phone. Additionally, a significant relation between cyberbullying and anonymity was found. These findings underscore one of the fundamental problems inherent in cyberspace victimization; that is, that people can easily maintain anonymity while engaging in cyberbullying (Kowalski & Limber, 2007; McKenna & Bargh, 2000).

Interestingly, although no gender differences were found in relation to victimization, males engaged in cyberbullying and pretended to be someone else in cyberspace significantly more frequently than females. Additionally, males were more likely than females to endorse that they would engage in cyberbullying in the future. This is consistent with results reported by Li (2006), Ybarra and Mitchell (2007), and Kowalski and Limber (2007) who suggested that males engage in cyberbullying more frequently than females do. Agatston's et al. (2007) work may explain this phenomenon. They explain that while females consider cyberbullying problematic, males tend not to view cyberbullying as problematic.

Data from the current study indicate that there are significant differences between non-bully-victims, pure-victims, pure-bullies, and bully-victims in terms of their self-reported psychiatric symptoms. The non-bully-victim group reported significantly less psychiatric symptoms (on all dimensions of SCL-90-R) than pure-victims and bully-victims. Although pure-bullies' symptom scores were higher than non-bully-victims' scores, no significant difference emerged between groups because the number of pure-bullies in the sample was relatively small (n = 14). It is possible that the small group size increased the standard error in the MANOVA, and restrained the statistical difference (Tabachnick & Fidell, 2007). However, these findings are still consistent with findings of Ybarra (2004), Klomek et al. (2007).

The path analysis revealed the expected direct effect of psychiatric symptoms on cyberbullying. Hostility and psychoticism significantly predicted cyberbullying. This finding is noteworthy. A recent study by Campbell and Morrison (2007) indicated

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** Although β has negative value, the direct effect is positive because of how the answers were coded. It was coded as Yes = 1, I am not sure = 2, No = 3. Therefore lower scores suggest higher possibility (see Method/Instruments).

that bullying is associated with a predisposition to experiencing psychotic symptomatology. Further, they suggested that experiencing psychotic-like symptoms increases the likelihood that a person's interpersonal environment is characterized by peer hostility and rejection (Campbell & Morrison, 2007). The current study provides support for a predictable relation between psychotic symptoms, hostility, and cyberbullying. Similarly, Camodeca and Goossens (2005) reported in their study that there is a strong relation between bullying and hostility. Correspondingly, according to the current path analysis, as psychoticism increases, exposure to cyberbullying decreases. Interpreted within the context of previous research, this means that if a person is a pure-bully, not a victim or bully-victim, the likelihood that he or she will also have psychotic-like experiences increases. According to Connolly and O'Moore (2003), pure-bullying is strongly related to psychoticism and neuroticism. However, a controversial-finding in the current study is that engaging in cyberbullying has a direct effect on one's exposure to cyberbullying. While at first glance it seems there is an inconsistency between these two findings, the findings are actually concordant when interpreted in light of the extant literature. In other words, this finding suggests that engaging in cyberbullying increases the likelihood of exposure to cyberbullying. This is quite possibly an explanation for the frequent finding in previous literature that has left unanswered the question as to why bully-victims exist in greater numbers in previous studies than pure-bullies or pure-victims (Arıcak et al., 2008; Li, 2006; 2007).

Path analysis also revealed that interpersonally sensitive people are exposed to cyberbullying less frequently compared to less interpersonally sensitive people. According to Rizzo, Daley, and Gunderson (2006), interpersonal sensitivity may be a factor affecting people's mood and as a result, people may be more interpersonally sensitive even in their cyberspace relationships and interactions. Although interpersonal sensitivity relates to neuroticism (Buhler, Haltenhof, Geyer & Bardeleben, 1999; Luty, Joyce, Mulder, Sullivan, & McKenzie, 2002), it also has a protective effect on being vulnerable in interpersonal relationships. People who are more sensitive may avoid dangerous or suspicious relationships in cyberspace.

Another interesting finding in the current study is that somatization and phobic anxiety are significant and *negative* predictors of possible future cyberbullying. That is, high self-reported somatization and phobic anxiety decrease the possibility of engaging in future cyberbullying (as perpetrator). The literature suggests that exposure to bullying (victimization) is causally related to somatization (Houbre et al., 2006; Strandmark & Hallberg, 2007; Swearer, Song, Cary, Eagle, & Mickelson, 2001; Ybarra & Mitchell, 2007), anxiety (Raskauskas & Stoltz, 2007; Rigby, Slee, & Martin, 2007) and school phobia (Kyriakides, Kaloyirou, & Lindsay, 2006; Thomas, 2006). However, before now, no study has been published on the direct effect of bullying or cyberbullying on phobic anxiety. This is the first study to report on this relation empirically and is important, because unlike other anxiety disorders, phobic anxiety occurs in specific situations. That is, a person who experiences phobic anxiety experiences an irrational fear and as a result avoids specific objects or situations (Lipsedge & Samuel, 2002). Previous studies on bullying have considered specific types of phobias such as school phobia or agoraphobia (Gladstone, Parker, & Malhi, 2006; Kyriakides et al., 2006; Thomas, 2006). Many researchers have proposed that

some hidden variable(s) in phobic anxiety, variables that cannot be investigated in the current study, influence the possibility of engaging in future cyberbullying. Future research should examine the effects of specific types of phobias.

Finally, the current study reports that some psychiatric symptoms are significant predictors of cyberbullying. The relation of psychoticism and hostility to cyberbullying particularly should be investigated in more detail in future research. Although the results of the path analysis revealed important findings, one limitation of the current study was that unequal participants by group (cyberbullying affiliation) did not allow for Multiple-Group Analysis in structural equation modeling. Future research ought to include studies that incorporate Multiple-Group Analysis to show differences among variables such as gender, socio-economic, and educational levels.

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Üniversite Öğrencilerindeki Siber Zorbalık Davranışlarının Bir Yordayıcısı Olarak Psikiyatrik Belirtiler (Özet)

Problem Durumu: İnternet ve online teknolojiler günümüz dünyasının en populer iletişim araçları olarak günlük yaşamın vazgeçilmezleri arasındaki yerini almıştır. Bu teknolojik araçlar özellikle gençler ve üniversite öğrencileri arasında daha da yaygın olarak kullanılmaktadır. İnternetin eğitim-öğretim başta olmak üzere pek çok alanda sağladığı yararlar

tartışılmazdır. Bununla birlikte her teknolojik gelişmede yaşandığı gibi görünen yararların yanı sıra teknolojinin kötüye kullanılmasından kaynaklanan sorunlar da ortaya çıkmaktadır. İnternet, cep telefonu, kısa mesaj servisi gibi iletişim araçları günlük yaşamı kolaylaştırmalarının yanında kötü niyetli kullanıcıların ellerinde diğer insanlara zarar veren araçlara dönüşmektedir. İsimsiz çağrılar, gizli kimlikle gönderilen yararsız (spam) e-postalar, hakaret ve tehdit içeren, bir kişi ya da grubu karalamak için e-posta ya da kısa mesajlar ile yayılan ses, görüntü ve metinler, virüslü e-postalar, tüm bu zararlı eylemlerin ortak bir isim altında tanımlanmasına neden olmuştur: Siber zorbalık.

Siber zorbalık, uluslararası literatürde genel olarak "diğer kişilere zarar vermek amacıyla, bir birey ya da grup tarafından, elektronik posta, cep telefonu, çağrı cihazı, kısa mesaj servisi ve web siteleri gibi bilgi ve iletişim teknolojilerinin kullanımını içeren; kasten, tekrarlayıcı bir şekilde ve düşmanca davranışları destekleyen davranışlar" şeklinde tanımlanmaktadır.

Siber zorbalık, son 10 yılda başta Amerika Birleşik Devletleri ve Kanada olmak üzere, internet ve online teknolojileri yoğun olarak kullanan ülkelerde başgöstermiş ve hızla yayılan ciddi bir sorun olarak karşımıza çıkmıştır. Özellikle gençler arasında daha fazla görülmesi ve sonuçlarının tahmin edilenden de yıkıcı olması, dikkatlerin kısa sürede bu sorun üzerinde odaklanmasına neden olmuştur. Bugün Amerika Birleşik Devletleri'nde siber zorbalık eylemleri okul başarısızlığından intihara dek uzanan pek çok sorunun nedenleri arasında sayılmaktadır. Son yıllarda Türkiye'de de hissedilen bu problem eğitim ve psikoloji alanında çalışan bazı uzmanların bu konuya eğilmesine neden olmuştur. Gerçekten de bu konuda gerçekleştirilen birkaç çalışma siber zorbalığın Türkiye'de de yaşanan bir sorun olduğunu göstermiştir.

Uluslararası literatür incelendiğinde, siber zorbalığın yaygınlığı, cinsiyete göre farklılıkları, görülme şekilleri ve geleneksel zorbalıkla ilişkisi başlıca araştırma problemleri olarak göze çarpmaktadır. Bu kadar önemli olmasına rağmen siber zorbalığı bir akıl sağlığı problemi olarak ele alan ve bu davranışları yordamaya çalışan araştırmalar oldukça azınlıktadır. Halbuki geleneksel zorbalıkla ilgili olarak çok sayıda yordamsal çalışmaya rastlamak mümkündür. Özellikle akıl sağlığı ile geleneksel zorbalık arasındaki ilişkileri gösteren çok sayıda araştırma bulunmaktadır.

İşte bu çalışma hem ülkemiz için yeni bir konu olan hem de uluslararası literatürde fazla değinilmeyen siber zorbalık ve psikiyatrik belirtiler ilişkisini ele almayı amaçlamıştır.

Araştırmanın Amacı: Bu çalışmanın amacı, siber zorbalık ve psikiyatrik belirtiler arasındaki ilişkiyi incelemektir. Psikiyatrik belirtilerin siber zorbalığı yordayıp yordamadığı, yorduyorsa hangi değişkenlerin anlamlı düzeyde yordama gücüne sahip olduğunun belirlenmesi amaçlanmıştır.

Araştırmanın Yöntemi: Bu çalışma kesitsel ve ilişkisel tarama türünde bir araştırmadır. Demografik bilgi formunun yanı sıra siber zorbalıkla ilgili sorular ve Belirti Tarama Listesi-90-R (SCL-90-R), 695 kişilik (247 erkek ve 448 kadın) bir üniversite öğrencisi grubuna uygulanmıştır. Veriler SPSS 15 ve AMOS 7.0 programlarında değerlendirilmiş, siber zorbalığı yordayan

psikiyatrik belirtilerin bulunmasında yapısal eşitlik modeli bağlamında yol analizi kullanılmıştır.

*Araştırmanın Bulguları :*Öğrencilerin %19.7'si hayatında en az bir kez siber zorbalık yaptığını, %54.4'ü ise en az bir kez siber kurban olduklarını belirtmişlerdir. Bu yüzdeler içinden hesaplanan saf-siber zorbaların oranı %2 iken, %36.7'si saf-siber kurban, %17.7'si ise siber zorba-kurban olarak tanımlanmıştır.

Araştırmaya katılan katılımcıların yaklaşık yarısı internet üzerinde ya da cep telefonu ile daha önceden (en az bir kez) bir başkasıymış gibi davrandıklarını ifade etmişlerdir. İnternet ya da cep telefonu üzerinde kimliğini gizleme davranışı ile siber zorbalık arasında da anlamlı bir ilişki olduğu bulunmuştur. Cinsiyete göre siber kurban olma durumu arasında anlamlı bir fark olmamasına karşın, erkeklerin kadınlara göre daha fazla siber zorbalık eylemlerine karıştıkları bulunmuştur. Aynı zamanda erkekler, gelecekteki olası siber zorbalık davranışlarında bulunmaya daha yatkın olarak belirlenmiştir.

Araştırmada göze çarpan en önemli bulgulardan ilki, siber zorba-kurban olmayan, saf-siber kurban, saf-siber zorba ve siber zorba-kurbanlar arasında psikiyatrik belirtiler açısından anlamlı bir farklılığa rastlanmış olmasıdır. Herhangi bir zorbalık yapmamış ve zorbalığa maruz kalmamış kişiler, saf-kurbanlardan ve zorba-kurbanlardan anlamlı düzeyde daha düşük psikiyatrik belirti göstermişlerdir. Diğer önemli bulgu ise düşmanca duygular ve psikotik belirtiler siber zorbalığı anlamlı olarak yordayan iki temel değişkendir. Aynı zamanda kişiler arası duyarlılık ve psikotik belirtiler siber zorbalığa uğrama yani siber zorba olma olasılığını da anlamlı düzeyde açıklamaktadır.

Bu bulgulara ek olarak daha önceden siber zorbalık yapmış olmak gelecekte de bu tür eylemlerde bulunma olasılığını artırmaktadır.

Araştırmanın Sonuçları ve Önerileri: Daha önceki pek çok araştırmada görüldüğü gibi bu çalışmada da ortaya çıkan sonuç, siber kurbanların sayısının siber zorbalara göre daha fazla olduğudur. Erkeklerin kadınlara göre daha fazla siber zorbalık eylemlerinde bulunmuş olması da diğer ülkelerde elde edilen bulgularla uyum göstermektedir.

Bu araştırmadan ortaya çıkan en önemli sonuç, düşmanca duygular ve psikotik belirtilerin siber zorbalığı yordayan iki temel değişken olmasıdır. Bu açıdan gelecekte yapılacak çalışmalarda bu iki değişkenin farklı desenlerde tekrar kullanılmak suretiyle derinlemesine analizlerin yapılması konuya netlik kazandıracaktır. Aynı zamanda cinsiyet, sosyoekonomik düzey ve eğitim düzeyi gibi farklı demografik özelliklere göre yapısal eşitlik modeli bağlamında çoklu grup analizlerinin de yapılması psikiyatrik belirtilerin farklı gruplara göre siber zorbalığı yordamada farklılaşıp farklılaşmadığını daha net ortaya koyacaktır.

*Anahtar Sözcükler***:** Siber zorbalık, siber kurban, psikiyatrik belirtiler, üniversite öğrencileri