



REVIEW ARTICLE

EFFECT OF CYBER BULLYING ON THE DISTRUST LEVELS OF PRE-SERVICE TEACHERS:
INTERNET ADDICTION AS MEDIATING VARIABLE*

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ABSTRACT

The aim of this study is to determine the effect of cyber bullying on the distrust levels among the final year university students by considering the intermediary effect of Internet addiction. The study group comprises preservice teachers who were senior year students at the Firat University Education Faculty in Elazığ city, Turkey during the spring term of the 2009–2010 academic year. Cyber bullying of preservice teachers directly impacts their distrust levels at the (.24) level. However, when Internet addiction was included in the model as a mediating variable, the direct impact of cyber bullying on distrust decreased to (.14). Therefore, it is evident that when cyber bullying is mediated by Internet addiction, its impact on the distrust levels of pre-service teachers is more significant.

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INTRODUCTION

Bullying has become a widespread problem among children as well as young people (National Crime Prevention Council, 2003). The most frequent types of bullying include physical (pushing and/or beating), verbal (swearing and/or nicknaming), and emotional bullying (excluding or alienating) (Kapçı, 2004). Technological changes that promote new negative behavior styles (e-pornography, cyber theft, Internet addiction, or spreading viruses) accelerate the spread of new types of crimes (Li, 2006). The most widespread of these new types of crime is cyber bullying, which is conducted through internet and mobile phones. In a study among 856 students in the age group of 11–19, Kowalski and Limber (2007) found that 16 %, 7 %, and 4 % of the students had been blackmailed or experienced other types of cyber bullying through mobile phones, internet, and e-mail, respectively. Keith and Martin found in a study (2005) that mostly male students are predominantly susceptible to negative activities such as blackmailing, swearing, and threatening. These include using swearing, threatening, clicking picture(s) without permission by mobile phone, broadcasting picture(s) without permission, blackmailing through chat, and broadcasting pornographic picture(s) or personal and broadcasting pornographic picture(s) or personal information on the internet (Willard, 2007). Cyber bullying essentially refers to the behaviors of people that are based on harming other individuals psychologically using electronic devices such as the Internet, telephones, etc.

(Li, 2006). Cyber bullying, which is conducted through e-mail, television (TV), Internet, and/or mobile phones and traditional bullying exhibit common features. Although traditional bullying includes misdemeanors that may be committed face-to-face, cyber bullying includes misdemeanors that may be conducted through the Internet and/or mobile phones and usually leaves a more negative psychological impact. Generally, cyber bullying is based on exerting negative influences on people with the objective of harming them as is the case with all other types of bullying (Mason, 2008). The types of cyber bullying behaviors that are proliferating everyday include cyber-aggression, political-oriented publishing, unauthorized access to people's bank accounts, circulating viruses that hack web sites, illegal duplication of credit card numbers and money laundering (Burden et al., 2008). The most important reasons for the spread of cyber bullying is Internet addiction, which is facilitated by the advancement of technology. In particular, the excessive usage of Internet by students and young people decreases social communication and interaction, thereby increasing the probability of internet addiction (Can, 2007).

The formation of an addiction is based on the frequency of performing a particular behavior. Internet addiction refers to an individual's obsession with technological devices (technological addiction) and is different from drug addiction, which is an obsession with alcohol or cigarettes. In any addiction, if one is devoid of these substances or devices, it arouses an overt feeling of tension and deprivation (Arsoy, 2009). One of the most obvious indicators of internet addiction is an individual spending considerable time on the internet. A few studies indicated that the time spent by internet addicts on

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(Chen, 2001; Chen and Paul, 2001). The following are a few other indicators of Internet addiction: Although internet addicts spend a greater proportion of their time on movie or music sites, game sites, chat rooms, pornographic sites, etc., non-addicts spend a greater proportion of their time on sites regarding news, shopping, and education (Kim and Kim, 2002). On an average, internet addicts spend over four hours each day on the Internet. This duration is comparable with the number of hours spent by normal users.

Although the frequency of visiting forbidden sites is 40 % for addicts, it is only 17 % for non-addicts (Günüç, 2009). As compared to non-addicts, internet addicts experience nervousness more easily when they are devoid of internet (Arisoy, 2009). In literature, findings indicate that a large number of the people who are vulnerable to cyber bullying are internet addicts. For example, in their study, Mitchell, Finkelhor, and Wolak (2003) detected that young people who are susceptible to cyber bullying are generally the ones who are internet addicts. In another study, it was detected that young people who are vulnerable to cyber bullying are the ones who use the internet for longer periods of time (on an average 4 hours) (Patricia et al., 2007). Usually, people who are vulnerable to cyber bullying exhibit behaviors that are characterized by inadequate socialization experiences, are usually under confident and introverted, and view their environment with suspicion (Mesch, 2001). It was found that the level of distrust among those children and young people who experience cyber bullying is rather high (Patchin and Hinduja, 2006); a study conducted in Canada indicated that a majority of the students experience cyber bullying and as a result, the overall level of distrust, aggression, and anger in the environment is rather high (Li, 2006). Similarly, Juvonen and Gross (2008) indicated that cyber bullying victims experience social anxiety owing to a decrease in their confidence levels. As compared to normal users, those people who experience cyber bullying exhibit lower self-confidence and are more introverted and distrustful of their environment; these behaviors are comparable to those exhibited by people experiencing traditional bullying (Smith, 2004). It was found that people who are internet addicts are especially distrustful of their environments and the overall level of their distrust tends to increase as a result of bullying. For example, the broadcasting of inappropriate photographs of 9–12 year old female students on pornographic sites in USA and Australia is the most frequent bully behavior. This situation bears a significant negative impact on the confidence levels of these young girls with respect to their environments (Paulson, 2003; Thorp, 2004). The detrimental impact of bullying reduces the victim's confidence level in the society in general (Fukuyama, 1998).

Aim of Study

The aim of this study is to determine the impact of cyber bullying on the distrust levels among the final year Firat University (Turkey) students (pre-service teachers) by considering the intermediary impact of Internet addiction.

MATERIALS AND METHODS

Each of the scales that were used in the study were validated

using the confirmatory factor analysis in the LISREL program. Subsequent to this and the achievement of the best fitness values in the measurement models, a mediation analysis was conducted using LISREL for arriving at the best structural model. Certain fitness criteria were used in order to determine the best model using the abovementioned analyses in the LISREL program. Of these analyses, it was found that the X^2 (Chi-Square) test was not meaningful, despite its high sensitivity to sample size. Although a X^2/sd proportion below 2 demonstrates good fitness, the proportion between 2 and 5 indicates an acceptable level of fitness. When the values of the Root Mean Square Error of Approximation (RMSEA) and the Standardized Root Mean Square Residual (SRMR) are between 0.08 and 0.05, they indicate acceptable fitness, and when these values are below 0.05, they indicate ideal fitness. On the other hand, when the values of the Normed Fit Index (NFI), Bentler-Bonnett Non-normed Fit Index (NNFI), Comparative Fit Index (CFI), Incremental Fit Index (IFI), Goodness of Fit Index, and Adjusted Goodness of Fit Index (AGFI) (Figure 1) are between 0.90 and 0.95, they indicate acceptable fitness, and when these values are over 0.95, they indicate ideal fitness (Şimşek, 2007).

Study Group

The study group comprised preservice teachers ($n = 380$) who were final year students at the Elazığ Fırat University Education Faculty in Turkey during the spring term of the 2009–2010 academic year. The scales were given to the entire study group, of which only 222 were returned and subsequently analyzed. Therefore, the total number of participants is $N = 222$. The following represents the gender frequency distribution of the participant pool: 145 males, 77 females.

Data Collection Instruments

Cyber bullying scale: This scale was developed by Erdur and Kavşut (2007). The confirmatory factor analysis in the present study indicated that the scale had eight items (five items were removed from the scale). The results of the confirmatory factor analysis are presented in Figure 1. Internet addiction scale: This scale was developed by Günüç (2009). The exploratory factor analysis indicated that the alpha reliability coefficient of this scale is (.887). In this study, the confirmatory factor analysis indicated that the scale had three items (three items were removed from the scale). The results of the confirmatory factor analysis are presented in Figure 1. Distrust scale: This scale was developed by Goldberg (2009). The exploratory factor analysis indicated that alpha reliability coefficient of this scale is (.830). The confirmatory factor analysis in the present study indicated that the scale had five items (two items were removed from the scale). The results of confirmatory factor analysis are presented in Fig. 1.

RESULTS

This section of the study indicates the findings of the confirmatory factor analysis that was conducted for the measurement model and the mediation tests that were conducted for the structural model in the study

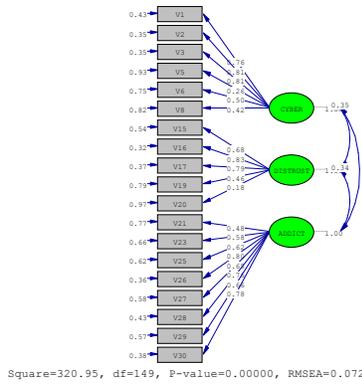


Figure 1. Confirmatory factor analysis of the measurement model

The measurement model comprises cyber bullying, internet addiction, and distrust scales. According to the results of the confirmatory factor analysis, this model comprises six items in the cyber bullying scale, five items on distrust scale, and eight items on Internet addiction scale. The relationship among the observed variables of cyber bullying, Internet addiction, and distrust scales was meaningful and the RMSEA value of 0.072 (0.08) was at an acceptable level of fitness. After establishing the fact that the measurement model was meaningful, the model based on mediation was tested. This model analyzed whether or not the distrust levels of those preservice teachers who were subject to cyber bullying varied meaningfully with the mediation of Internet addiction. In the model, cyber bullying was identified as an external variable, distrust levels as an internal variable, and Internet addiction as a mediating variable. The model was tested in two stages. In the first stage, the direct impact of cyber bullying on the level of distrust was tested, while in the second stage, the impact of cyber bullying on the distrust levels with the mediation of Internet addiction was tested. The observed variables of the scales in the measurement model and the meaningfulness of the relationship between them were shown with “t” values.

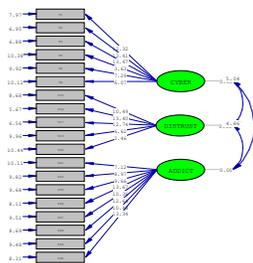


Figure 2. “t” Values Of confirmatory factor analysis of the measurement model

The relationship between the observed variables of the cyber bullying, Internet addiction and distrust scales was meaningful and the RMSEA value 0.072 (0.08) was at an acceptable level.

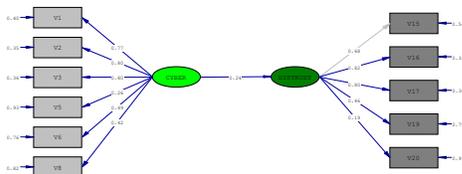


Figure 3. Direct impact of cyber bullying on the level of trust

0.24 level. A low level of distrust is an agreeable situation for the mediation test (Şimşek, 2007).

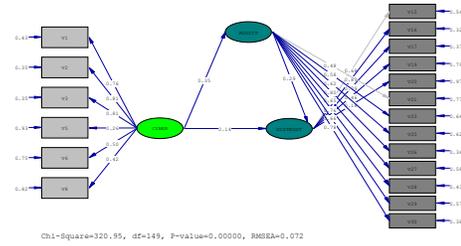


Figure 4. Model considering internet addiction as a mediating variable

Figure 4 indicates that subsequent to determining the direct impact of cyber bullying on distrust, when Internet addiction was included as a mediating variable in the model, the direct impact of cyber bullying on the distrust level decreased to 0.14. It was found that cyber bullying impacts Internet addiction at the 0.35 level, and Internet addiction impacts distrust at the 0.29 level. The fact that the direct impact of cyber bullying on the distrust level decreases to 0.14 with the mediation of Internet addiction indicates that Internet addiction has a full mediation effect on the relationship between cyber bullying and distrust. T-test values of the mediation test indicates that the direct relationship between cyber bullying and level of distrust is not significant. Evidently, cyber bullying usually has a more significant impact on the level of distrust when mediated by Internet addiction (full mediation).

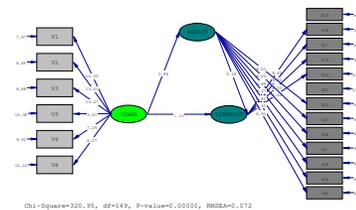


Figure 5. “t” Values of mediating model

According to t-test values of the mediation test which shows that directly relationship between cyber bullying and distrust is not significant. It can be seen that in general cyber bullying affects distrust more when mediated by internet addiction (full mediation).

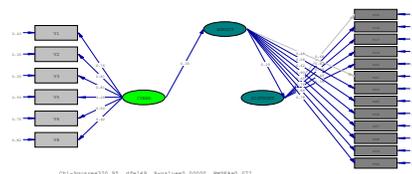


Figure 6. Mediating model

Figure 6 indicates that since the mediating test which demonstrates a direct impact of cyber bullying on the distrust

levels of the pre-service teachers has been found to be meaningless, it has been removed from model Cyber bullying that is mediated by internet addiction bears a more significant impact on the distrust levels of pre-service teachers. The fit index values for this model are indicated in Table 1.

Table 1. Fit index of model

Compliance Criteria	Compliance Indicators
Goodness Of Fit Index	0.90
Adjusted Goodness Of Fit Index	0.87
Comparative Fit Index	0.90
Normed Fit Index	0.90
Model CAIC	581.76
X ² /SD	1.04*
RMR	0.050**
RMSEA	0.072***

* Good Values: 0.02, ** Acceptable Values: 0.08, *** Acceptable Values: 0.08

CONCLUSION

The instances of cyber bullying, which have increased owing to Internet addiction, have become a major cause of concern for young people. Owing to this situation, cyber bullying attracts much more attention in society than traditional bullying. In this context, it was found that the final year university students (pre-service teachers) were rather vulnerable to cyber bullying owing to their Internet addiction and this significantly impacted their levels of distrust. According to the perceptions of pre-service teachers, although the direct impact of individual bullying on the level of distrust is meaningful at the .24 level, this relationship is considered to be meaningless when Internet addiction is considered as a mediating variable in the model. It was found that the impact of cyber bullying behaviors on the level of distrust with respect to the environment is meaningful when the Internet addiction is considered as a mediating variable (full mediation). In order to decrease the instances of cyber bullying among pre-service teachers who are vulnerable to cyber bullying owing to their Internet addiction, external deterrents that prevent connection to sites that include cyber bullying elements must be enforced, Internet education must be provided to pre-service teachers, social activities that pre-service teachers may participate in during their free time rather than accessing the Internet must be planned and implemented, and the usage of internet from the standpoint of sharing knowledge must be encouraged. If such measures are adopted, it is possible to reduce the risk of pre-service teachers becoming Internet addicts, thereby reducing their exposure to cyber bullying.

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