

## Journal Pre-proof

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## Highlights

- Cybervictimization increases the probability of suicidal thinking.
- Victims of cyberbullying presenting high levels of anxiety, depression and stress.
- Cybervictimization increases the probability of anxiety, depression and stress.

Journal Pre-proof

Relationship between suicidal thinking, anxiety, depression and stress in university students  
who are victims of cyberbullying

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The objective of this study is to analyze the predictive capacity of cybervictimization with regards to suicidal thinking and anxiety, depression and stress in university students. The European Cyberbullying Intervention Project Questionnaire, the Depression Anxiety Stress Scale-21 and the Suicidality Scale were administered to a sample of 1282 university students (594 men and 688 women) aged between 18 and 46 ( $M = 21.65$ ;  $SD = 4.25$ ). The results suggest that being a cybervictim increases the probability of suicidal thinking and presenting high levels of anxiety, depression and stress. This study highlights the high prevalence rates of cyberbullying in the university environment and how this issue is associated with emotional problems and suicidal thinking. The identification of these relationships may allow for the development of effective preventive intervention measures to respond to this problem.

Keywords: Cyberbullying; victims; suicidal thinking; emotional problems; university students.

## 1. Introduction

Over recent years, the cases of bullying in school aged individuals using the information and communication technologies (ICT) has increased dramatically. The widespread use of ICT

has brought with it many advantages, but it has also led to the exposure to new risks by the young generation, such as cyberbullying. Cyberbullying is defined as «a type of aggressive and intentional behavior that repeats frequently over time through the use, by an individual or group, of electronic devices, on a victim who cannot easily defend him/herself » (Smith et al., 2008, p. 376). Typical behaviors include denigration (insults and humiliation), offensive or threatening messages or calls, identity theft, exclusion, the publication of confidential information, manipulation of photographs, the recording of physical assaults that are subsequently disseminated, etc. (Campbell and Bauman, 2018; Wright, 2017).

The majority of studies have analyzed cyberbullying in adolescence, however, distinct studies have suggested that cyberbullying also takes place in the university environment (Dilmac, 2009; Faucher et al., 2014; Martínez-Monteagudo et al., 2019a; Schenk and Fremouw, 2012; Turan, et al., 2011). The prevalence rates found for cybervictimization and cyberaggression in the university environment vary considerably. This variation may be due in part to the definition of cyberbullying, to the methodologies used or to distinct understandings as to what exactly is meant by cyberbullying (Bauman, 2013). The data, however, are alarming, suggesting that between 20 and 50% of the youth have experienced cybervictimization in the university environment. Therefore, Dilmac (2009) verified that 22.5% of the university students had intimidated another student on at least one occasion and 55.3% had been a victim of cyberbullying at least once in their life. Faucher et al. (2014) used a sample of 1925 Canadian university students to show that 24.1% of these students had suffered from cyberbullying, while 5.1% claimed to have engaged in this cyberbullying behavior.

The negative consequences of cyberbullying are well known, both for victims and for aggressors during adolescence (Cross et al., 2015; Elipe et al., 2017; Martínez-Monteagudo et al., 2019b; Ortega et al., 2012); however, few studies have analyzed these consequences in

the university environment. The few studies that have been conducted with university samples have revealed the negative impact of cyberbullying, especially on the victim (Faucher et al., 2014; Jenaro et al., 2017; Schenk and Fremouw, 2012). Recent studies have shown that university student cyberbullying victims suffer from anxiety, depression, stress, low self-esteem, anger, helplessness, somatization, sleep disorders, irritability and concentration problems that affect their academic performance (Faucher et al., 2014; Jenaro et al., 2017; Schenk and Fremouw, 2012). In more extreme cases, even suicidal thinking or behavior may arise (Schenk and Fremouw, 2012). Thus, cybervictimization has been widely associated with suicide (Bauman, 2013; Bauman et al., 2013; Brailovskaia et al., 2018; Chang et al., 2019; Gini and Espelage, 2014; Hinduja and Patchin, 2010; Jasso et al., 2018; John et al., 2018; Kowalski et al., 2014). John et al. (2018) in systematic review concluded that victims of cyberbullying are at a greater risk than nonvictims of both self-harm and suicidal behaviors. In fact, recent studies have shown that cyberbullying has a stronger association with suicidal thinking (Bauman et al., 2013; Cénat et al., 2019a; Cénat et al., 2019b; Hinduja and Patchin, 2010; Sampasa-Kanyinga et al., 2014; Schenk and Fremouw, 2012; Van Geel et al., 2014). This may be due to the very characteristics of cyberbullying which make it more detrimental, since the information is permanently available for access by the entire world, 24 hours-a-day, thereby resulting in a bullying that is ongoing and inevitable, since material published over the Internet tends to be of public access for extended periods of time, facilitating the anonymity of the bullies and extending the victimization beyond the educational environment (Hinduja and Patchin, 2010).

Suicide, however, is rarely caused by a single factor. Various studies have suggested that cybervictimization exacerbates other emotional problems such as hopelessness, low self-esteem, anxiety, depression and stress, thereby increasing suicidal thinking or behavior (Hinduja and Patchin, 2009; Hinduja and Patchin, 2010). Some studies have shown that the

relationship between cyberbullying and suicide may also reveal the existence of complex relationships that predispose victims to having emotional problems (anxiety, depression and stress) which at the same time are associated with an increase in suicidal thinking (Hinduja and Patchin, 2009).

Suicide is the second largest cause of death in the population aged between 15 and 24 (World Health Organization, 2014). Suicidal behavior is complex and tends to be considered as a continuum that ranges from the idea of death or suicide to the suicide attempt and the actual completed suicide. Therefore, suicidal thinking is considered to be a precedent to suicidal planning and behavior, being the most relevant predictor of future attempts and the completed act (Sánchez et al., 2014). So, if suicidal thinking is a necessary prior condition to the suicidal behavior, this initial phase should be studied in order to implement successful suicide prevention strategies. Various studies have stressed that university students are more vulnerable to displaying this suicidal thinking (Mackenzie et al., 2011; Storrie et al., 2010) due to personal, social and academic changes that they experience. Cyberbullying is one of the stressful life events that has been related to suicidal thinking and suicidal behavior. Therefore, scientific research has found that suicidal ideas and attempts tend to occur in students who experience situations of cyberbullying, in some cases culminating in the completed suicide (Hinduja and Patchin, 2010; Jasso et al., 2018; Kowalski et al., 2014; Schenk and Fremouw, 2012). Cyberbullying causes excessive pressure for students, leading some youth to consider suicide as their only escape. Cross et al. (2012), considering data from 41 suicide cases, concluded that 78% of these students had been bullied over the Internet and in real life. Karch et al. (2013) found that 25% of the youth that had completed the suicidal act had suffered from school problems, although only 12.4% of these problems were due to bullying.

Thus, taking into account the limited number of studies on cyberbullying in the university environment and given the relevance of the problem, both due to its high prevalence as well as its potentially devastating consequences, studies should attempt to clarify the true relationships between cyberbullying, suicidal thinking and the associated emotional problems. The analysis of suicide risk and the identification of students who may be at risk of attempting suicide are important tasks to be carried out, so as to ensure suicide prevention in the university environment. Therefore, the objective of this study is to analyze the predictive power of cyberbullying on suicidal thinking and the associated emotional problems (anxiety, depression and stress) in university students. According to prior scientific evidence, it is anticipated that: (a) being a victim of cyberbullying is a predictive variable for suicidal thinking (hypothesis 1); and (b) being a victim of cyberbullying increases the probability of having high levels of anxiety, depression and stress (hypothesis 2). The final study objective is to obtain scientific data that will permit the creation of interventions that will potentially decrease suicidal thinking in this group.

## 2. Methods

### 2.1. Participants

In all, 1328 Spanish university students aged 18 to 46 ( $M = 21.65$ ;  $SD = 4.25$ ) participated in the study. Of these, 46 (3.5%) were excluded due to errors or omissions in their responses or because they did not wish to participate in the study. The final sample consisted of 1282 university students (46.33% men and 53.67% women) who were pursuing a Master's degree in Early Childhood Education (24.88%), a Master's degree in Primary Education (27.77%), a Psychology degree (17.16%), a degree in Physical Activity and Sports Sciences (15.83%) and a degree in Business Administration and Management (14.36%). Using the Chi-square test of uniformity of frequency distribution, it was verified that no



statistically significant differences existed between the sex x course groups ( $\chi^2 = 3.85$ ;  $p = .312$ ).

## 2.2. Instruments

*European Cyberbullying Intervention Project Questionnaire* (ECIPQ; Del Rey et al., 2015).

For the identification of the victims of cyberbullying in the university setting, the Spanish version of the European Cyberbullying Intervention Project Questionnaire (ECIPQ; Del Rey et al., 2015) was used. The questionnaire contains 22 items divided into two scales, Cybervictimization (11 items) and Cyberaggression (11 items) responded to via a Likert scale of 1 to 5 (1 = never; 5 = more than once a week). This study only used the Cybervictimization scale, in which students are to report the extent to which they have suffered from situations of victimization via electronic means during the past two months (exclusion or diffusion of rumors, receiving insults, identity theft, being excluded or ignored or image manipulation) (e.g. "Someone said nasty things to me or called me names using texts or online messages"). The scale has shown suitable rates of internal consistency (Casas et al., 2013). In this study, the cybervictimization subscale had a suitable reliability rating (Cronbach's alpha of .86).

*Depression Anxiety and Stress Scale-21* (DASS-21; Bados et al., 2005).

The Depression Anxiety Stress Scale-21 (DASS-21) is an abridged version of the scale by Lovibond and Lovibond (1995) to assess depression, anxiety and stress. It consists of 21 items that report on three factors (depression, anxiety and stress). The depression subscale assesses dysphoria, hopelessness, sadness, anhedonia, devaluation of life, self-deprecation and a lack of interest or involvement (e.g. "I have felt discouraged and sad"). The anxiety subscale assesses aspects related to psycho-physiological activation or self-excitation (sweating of hands, tremor, etc.), and subjective anxiety experiences (e.g. I have had

difficulty breathing). Finally, the stress subscale assesses the difficulty relaxing, nervous arousal, agitation, irritability and impatience (e.g. “I have found it difficult to relax”). Respondents evaluate the severity/frequency with which they have experienced each of the 21 negative emotional symptoms during the previous week. This test has a satisfactory convergent validity and suitable reliability (Bados et al., 2005; Lovibond and Lovibond, 1995). In this study, the reliability of the DASS-21 for the depression and stress scales had an alpha of .85 and .83, respectively, whereas the anxiety scale had a Cronbach’s alpha of .73. Collectively, the items making up the DASS-21 had a Cronbach’s alpha of .91.

*The Suicidality Scale* (Okasha et al., 1981).

The Suicidality Scale consists of four items. The first three items assess suicidal thinking and the fourth refers to a suicide attempt over the past 12 months: (1) Have you ever thought that life was not worth living? (2) Have you ever wanted to be dead? (3) Have you ever thought about ending your life? (4) Have you ever tried to kill yourself? A Likert scale from 0 to 3 was used (0 = never; 3 = frequently). The item on the attempt to commit suicide was also scored from 0 to 3 points, according to the number of suicide attempts made (0 = no attempt; 3 = three or more attempts). In this study, only the items on suicidal thinking were used. The scale had suitable rates of reliability and validity (García-Vega et al., 2018). A Cronbach’s alpha of .92 was reported for this study.

### 2.3. Procedures

First, an interview was conducted with each of the directors of the University departments participating in the study, in order to explain the study objectives and to promote their collaboration. Questionnaires were administered collectively in the classroom, informing students of the voluntary nature of their participation and of the confidentiality of the results

obtained. Researchers were present during the administration of the questionnaires in order to resolve any potential doubts and to emphasize that no questions should be left unanswered. The mean questionnaire administration time was 10 minutes for the ECIPQ, 10 minutes for the DASS-21 and three minutes for the Suicidality Scale. Consent to conduct the study was received from the University of Alicante ethics committee. All standards related to research with humans were respected, following the ethical principles of the Declaration of Helsinki.

#### 2.4. Statistical analysis

To examine the predictive capacity of cybervictimization on suicidal thinking and anxiety, depression and stress, a binary logistic regression analysis was performed following the forward stepwise regression procedure based on the Wald statistical test. The logistic modelling permitted estimation of the probability of an event, act or result taking place (e.g., suicidal thinking) in the presence of one or more predictors (e.g. cybervictimization). This probability is estimated via the odd ratio (OR) statistic. If the OR is greater than one, the increase in the independent variable is associated with an increase in the possibility of the event's taking place. On the other hand, if the OR is less than one, the increase in the independent variable brings with it a decrease in the possibility of taking place. For this analysis, the variables were dichotomized as: (a) non-victim: scores equal to or lower than the 25<sup>th</sup> quantile on the cybervictimization subscale; (b) victim: scores equal to or greater than the 75<sup>th</sup> quantile on the cybervictimization subscale.

### 3. Results

#### 3.1. Frequency of cybervictimization, anxiety, depression and stress

The results indicate that 81.4% ( $n = 1044$ ) of the university students have not been victims of cyberbullying in the past two months, whereas 18.6% ( $n = 238$ ) reported having been the victim of cyberbullying over the past two months. Of the students who are cyberbullying

victims, 72.2% reported high levels of anxiety, 68.1% showed high levels of depression and 75.2% revealed high stress levels.

### 3.2. Predicting suicidal thinking based on being a victim of cyberbullying

The model created to predict suicidal thinking based on cybervictimization for the total sample permits an accurate estimate of 65.5% of the cases ( $\chi^2 = 6.334$ ;  $p = .001$ ) when the cybervictimization predictor variable enters the equation. The adjustment value (Nagelkerke's  $R^2$ ) of the predictive model was .131. The OR of the logistic model indicates that the students have a 5% higher probability of having suicidal thinking with each unit increase on the cybervictimization scale (see Table 1). In men, the model permits an accurate estimate of 65.7% of the cases ( $\chi^2 = 5.770$ ;  $p = .016$ ) when the cybervictimization predictor variable enters the equation. The adjustment value (Nagelkerke's  $R^2$ ) of the predictive model was .029. The OR of the logistic model indicates that the students have a 7% higher probability of having suicidal thinking with each unit increase on the cybervictimization scale. In the sample of women the results are similar. The model permits an accurate estimate of 54.7% of the cases ( $\chi^2 = 0.982$ ;  $p = .001$ ). The adjustment value (Nagelkerke's  $R^2$ ) of the predictive model was .001. The OR indicates that women students have a 3% higher probability of having suicidal thinking with each unit increase on the cybervictimization scale (see Table 1).

INSERT TABLE 1

### 3.3. Prediction of high levels of anxiety, depression and stress in response to being a victim of cyberbullying

The model created to predict high levels of anxiety based on cybervictimization for the total sample permits the accurate estimate of 67% of the cases ( $\chi^2 = 28.72$ ;  $p = .001$ ) with the cybervictimization predictor variable being included in the equation. The adjustment value

(Nagelkerke's  $R^2$ ) of the predictive model is .162. The OR of the logistic model indicates that students have a 25% higher probability of having high levels of anxiety per unit increase of the cybervictimization scale. As for depression, the logistic regression model created to predict high levels of depression permits an accurate estimate of 65% of the cases ( $\chi^2 = 15.911$ ;  $p = .001$ ) with the cybervictimization predictor variable being included in the equation. The adjustment value (Nagelkerke's  $R^2$ ) of the predictive model is .132. The OR of the logistic model indicates that students have a 15% higher probability of having high levels of depression per unit increase of the cybervictimization scale. On the other hand, the model created to predict high stress levels based on cybervictimization for the entire sample permits an accurate estimate of 57.4% of the cases ( $\chi^2 = 39.20$ ;  $p = .001$ ) with the cybervictimization predictor variable being included in the equation. The adjustment value (Nagelkerke's  $R^2$ ) of the predictive model is .183. The OR of the logistic model indicates that students have a 43% greater probability of having a high stress level per unit increase in the cybervictimization scale (see Table 2).

In men, the model created to predict high levels of anxiety based on cybervictimization permits the accurate estimate of 63% of the cases ( $\chi^2 = 14.591$ ;  $p = .000$ ) with the cybervictimization predictor variable being included in the equation (Nagelkerke's  $R^2 = .040$ ). The OR indicates that students have a 19% greater probability of having a high anxiety level per unit increase in the cybervictimization scale. As for depression, the logistic regression model created permits an accurate estimate of 69.7% of the cases ( $\chi^2 = 30.211$ ;  $p = .001$ ) with the cybervictimization predictor variable being included in the equation. The adjustment value (Nagelkerke's  $R^2$ ) of the predictive model is .273. The OR indicates that students have a 16% greater probability of having a high depression level per unit increase in the cybervictimization scale. The model created to predict high stress levels based on cybervictimization permits an accurate estimate of 64.7% of the cases ( $\chi^2 = 12.476$ ;  $p = .000$ )

with the cybervictimization predictor variable being included in the equation (Nagelkerke's  $R^2 = .117$ ). The OR indicates that students have a 48% greater probability of having a high stress level per unit increase in the cybervictimization scale (see Table 2).

In the sample of women, the model created to predict high levels of anxiety based on cybervictimization permits an accurate estimate of 70% of the cases ( $\chi^2 = 17.142$ ;  $p = .000$ ) (Nagelkerke's  $R^2 = .177$ ). The OR indicates that students have a 35% greater probability of having a high anxiety level per unit increase in the cybervictimization scale. On the other hand, the model created to predict high depression levels based on cybervictimization in women permits an accurate estimate of 57.3% of the cases ( $\chi^2 = 40.50$ ;  $p = .001$ ) with the cybervictimization predictor variable being included in the equation (Nagelkerke's  $R^2 = .051$ ). The OR indicates that students have a 9% greater probability of having a high depression level per unit increase in the cybervictimization scale. Finally, as for stress, the logistic regression model created permits an accurate estimate of 61.7% of the cases ( $\chi^2 = 25.983$ ;  $p = .000$ ) with the cybervictimization predictor variable being included in the equation (Nagelkerke's  $R^2 = .073$ ). The OR indicates that students have a 40% greater probability of having a high stress level per unit increase in the cybervictimization scale (see Table 2).

INSERT TABLE 2

#### 4. Discussion

The objective of this study was to analyze the relationship between suicidal thinking and associated emotional problems (anxiety, depression and stress) in victims of cyberbullying in the university environment. Many studies have revealed the close relationships existing between suicidal thinking, anxiety, depression and stress and traditional bullying; however, few studies have specifically considered cyberbullying (Faucher et al., 2014; Jenaro et al.,

2017; Schenk and Fremouw, 2012). Also, research on cyberbullying in the university setting is quite limited, as compared to the number of studies focusing on the adolescence period. Therefore, this study attempts to address these limitations by analyzing the predictive capacity of cyberbullying on suicidal thinking and associated emotional disorders in students of higher education.

The results of this study indicate that 18.6% reported having been a victim of cyberbullying over the past two months. Of the cyberbullying victims, 72.2% reported high levels of anxiety, 68.1% had high levels of depression and 75.2% showed high stress levels. These data coincide with past studies conducted on higher education which reported similar prevalence rates (Dilmac, 2009; Faucher et al., 2014), and confirm the high prevalence in this university population, despite the fact that, generally speaking, it has received little attention from the research community. On the other hand, the data has confirmed that being a cyberbullying victim is a predictor variable for suicidal thinking and high levels of anxiety, depression and stress, in line with hypothesis 1 and 2 of this study. The results coincide with prior studies that highlight the close relationship between cyberbullying victims and suicidal thinking (Cénat et al., 2019a; Cénat et al., 2019b; Cross et al., 2012; Hinduja and Patchin, 2009; Hinduja and Patchin, 2010; Karch et al., 2013; Jasso et al., 2018; Kowalski et al., 2014; Sampasa-Kanyinga et al., 2014; Schneider et al., 2012; Schenk and Fremouw, 2012; Van Geel et al., 2014). Schneider et al. (2012) found a similar association for both suicidal thinking as well as suicide attempts. Victims of cyberbullying were four times as likely to report suicidal thinking and five times as likely to engage in suicide attempts. On the other hand, data have revealed that being a victim of cyberbullying predicts high levels of anxiety, depression and stress (hypothesis 2), corroborating past studies that pointed to this same relationship (Faucher et al., 2014; Schenk and Fremouw, 2012). So, cyberbullying increases the levels of anxiety, depression and stress, and the probability of suicidal thinking in these

students (Kowalski et al., 2014; Van Geel et al., 2014). Therefore, since students who are victims of cyberbullying are at greater risk of suffering from emotional disorders and suicidal thinking, prevention treatments and interventions should be offered to act on these levels of anxiety, depression and stress in students. On the one hand, the objective is to lessen these emotional disorders that cause personal, emotional and academic imbalances while, on the other hand, acting directly on suicidal thinking, controlling, above all, the levels of anxiety, depression and stress of these victimized students, given the relationship found in this study with respect to these variables. Likewise, these interventions could be similar in both sexes, taking into account the results obtained in the present investigation. The predictive capacity of cyberbullying on suicidal ideation and emotional problems has been similar in men and women, corroborating previous empirical evidence (Cénat et al. 2019a; Schenk and Fremouw, 2012). Cénat et al. (2019a) using a large sample of 4626 French undergraduates, found that cybervictims of both genders reported more suicidal ideations and suicidal attempts than non-victims.

Finally, it is necessary to highlight some of the limitations of this study. The cross-sectional study design does not permit the establishment of a causal relationship between the distinct variables; therefore, in the future, longitudinal studies should be conducted. On the one hand, it is useful to add diverse assessment methodologies for the distinct variables, since the measurement of variables based on self-reporting may produce bias and social desirability in the responses. Finally, it must be taken into account for the interpretation of the results obtained in the present investigation, that the timeframe of the questionnaires used is different. Thus the ECIPQ report the extent to which students have suffered from situations of victimization via electronic means during the past two months, DASS-21 assessed the severity/frequency with which they have experienced each of the 21 negative emotional symptoms during the previous week and Suicidality Scale assessed over the past 12 months.



However, despite these limitations, the results from this study highlight the fact that, on the one hand, cybervictimization predicts suicidal thinking and associated emotional problems, and high levels of depression and stress increase the probability of suicidal thinking. By offering scientific evidence regarding these relationships, the design of intervention programs that act directly on these variables is facilitated, so as to ultimately avoid the fatal consequences, considering the close relationship found to exist between cyberbullying, suicidal thinking and the subsequent suicide attempt. Suicidal thinking is the variable preceding the actual attempt to commit suicide (Sánchez et al., 2014), and therefore is highly relevant and should be identified as soon as possible in order to ensure effective intervention that avoids this final phase, that is, the suicide attempt and the potentially fatal consequences or death of the student. When bullying has negative consequences such as the suicide attempt, it is necessary to implement effective prevention and intervention strategies.

Likewise, we believe that future studies should attempt to determine which factors serve as protectors between intimidation and the suicide risk. So, it is necessary to identify which variables differentiate those students having suicidal thinking after suffering from school bullying or cyberbullying from those students who also suffer from this bullying but do not consider this suicidal possibility. Thus, for example, social support, locus of control, self-concept or social and emotional skills may act as buffers against suicidal thinking in the case of cyberbullying. Therefore, intervention strategies should also attempt to increase these protective factors in order to decrease the risk factors associated with cyberbullying and suicide.

Finally, this study helps to reveal a problem that currently exists in the university setting, and that, until now, has received limited attention from the scientific community. It is also necessary to disseminate this problem in order to increase the awareness of social and educational policies aimed at offering effective responses for this group, which has been

frequently ignored, despite the negative consequences of the same. Therefore, this study may help inform education professionals, parents, students and society in general, of the high prevalence of cyberbullying in the university environment and the relationship between this problem and emotional issues and suicidal thinking. By recognizing these relationships, we can strengthen the measures taken against the problem.

CrediT author statement

**María Carmen Martínez Monteagudo:** Conceptualization, Methodology, Formal analysis, Writing - Original Draft preparation. **Beatriz Delgado:** Conceptualization, Methodology. **Ángela Díaz-Herrero:** Methodology, Reviewing and Editing. **José Manuel García-Fernández:** Formal analysis, Reviewing and Editing.

#### Declaration of interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Table 1. Binary logistic regression for the probability of suicidal thinking based on being a victim of cyberbullying

Total sample	<i>B</i>	<i>S.E.</i>	<i>Wald</i>	<i>p</i>	<i>OR</i>	<i>CI 95%</i>
Cybervictimization	0.52	0.03	3.85	.000	1.05	1.01-1.11
Constant	-3.15	0.06	26.20	.000	0.73	
<b>Sex</b>						
<b>Males</b>						
Cybervictimization	0.12	0.05	5.45	.000	1.07	1.02-1.11
Constant	-2.08	0.65	10.12	.001	0.16	
<b>Females</b>						
Cybervictimization	0.03	0.03	0.98	.002	1.03	0.97-1.09
Constant	-5.40	0.37	2.12	.001	0.58	

*Note.* *B* = coefficient; *S.E.* = standard error; *p* = probability; *OR* = odds ratio; *C.I.* = confidence interval at 95%.



Table 2. Binary logistic regression for the probability of high levels of anxiety, depression and stress based on being a victim of cyberbullying

Total sample		<i>B</i>	<i>S.E.</i>	<i>Wald</i>	<i>p</i>	<i>OR</i>	<i>CI 95%</i>
Anxiety	Cybervictimization	0.23	0.53	17.95	.000	1.25	1.12-1.39
	Constant	0.19	0.09	4.35	.000	0.04	
Depression	Cybervictimization	0.14	0.40	12.27	.000	1.15	1.06-1.25
	Constant	0.50	0.89	0.32	.000	0.57	
Stress	Cybervictimization	0.35	0.72	23.92	.000	1.43	1.24-1.64
	Constant	0.03	0.93	0.13	.000	0.72	
<b>Sex</b>							
<b>Males</b>							
Anxiety	Cybervictimization	0.18	0.06	10.05	.002	1.19	1.07-1.33
	Constant	-1.59	0.67	5.73	.017	0.20	
Depression	Cybervictimization	0.61	0.15	15.85	.000	1.16	1.11-1.21
	Constant	-7.44	1.81	16.77	.000	0.00	
Stress	Cybervictimization	0.39	0.14	7.71	.005	1.48	1.12-1.96
	Constant	-4.89	1.66	8.65	.003	0.01	
<b>Females</b>							
Anxiety	Cybervictimization	0.43	0.16	7.41	.006	1.35	1.19-1.58
	Constant	-5.09	1.83	7.79	.005	0.01	
Depression	Cybervictimization	0.26	0.45	14.36	.000	1.09	1.05-1.12
	Constant	0.49	0.88	0.21	.000	0.68	
Stress	Cybervictimization	0.34	0.09	15.90	.000	1.40	1.18-1.66
	Constant	-3.49	0.98	12.60	.000	0.03	

*Note.* B = coefficient; S.E. = standard error;  $p$  = probability; *OR* = odds ratio; C.I. = confidence interval at 95%.

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