Original Article

Implementing a Cyberbullying Training: Impact on Undergraduate Nursing Students

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Abstract
Background and aim: University students are at high risk of becoming cyberbullies and victims because they use technology frequently, transition to a new life, and are a more independent group. It is necessary to raise the awareness of university students and increase their sensitivity on this issue through initiatives to prevent cyberbullying. In this study, it is aimed to reduce the cyberbully/victim situations and increase their sensitivity on this issue through cyberbullying training given to university students.
Methodology: Non-randomized pretest-posttest control group design intervention study was used. It was conducted as a study that involved 746 students. The students were provided only 2 hours of training on cyberbullying.
Results: The results revealed that increase in sensitivity of the study group toward cyberbullying.
Conclusions: It may be concluded from this study's result that short-term and continuous training, if integrated into the curriculum, could ensure students are kept informed about cyberbullying, thus raising their sensitivity. The long-term comprehensive interventions applied in earlier studies may not be practical for university students, and so the results of this study provide significant data for potential training content to be planned in the future.

Key words: Cyberbullying, nursing students, university students, education, intervention

Introduction

University life opens up various different environments to students, requiring them to develop new behavioral, cognitive, social and emotional responses (Martinez-Monteagudo et al., 2019). Such changes enhance the sense of autonomy and responsibility of students, while also exposing them to many academic, social and emotional hardships (American College Health Association, 2013), one of which is cyberbullying. Cyberbullying is accepted as the most common bullying and interpersonal mobbing method experienced in academic environments (Cassidy et al., 2014). Cyberbullying in the academic setting can be defined as: the conveying of language or images through information or communication technologies that can "defame, threaten, harass, bully, exclude, discriminate, stalk, disclose personal information or contain offensive, vulgar or derogatory comments" (Faucher et al., 2015).

With no limitations in terms of location or time, and the potential for full anonymity, cyberbullying can reach and affect greater numbers of people than traditional bullying (Al Qudah et al., 2019). In their study, Van Geel et al. (2014) found cyberbullying to be associated with many negative outcomes, such as depression, anxiety, self-esteem problems, absence from/failure at school, and suicidal thoughts. Cyberbullying is accepted as a significant online risk factor, with long-term negative psychological and cognitive effects, and is observed at high rates

especially among university students (Schenk & Fremouw, 2012; Al Qudah et al., 2019).

Previous studies have found that a large proportion of university students, ranging from 19% to 60%, depending on the study, have been exposed to cyberbullying (Musharraf & Anis-ul-Haque, 2018; Lindsay & Krysik, 2012; Zalaquett & Chatters, 2014; Walker et al., 2011). A previous systematic review, on the other hand, reported cyberbullying rates among university students in the range of 7–27% (Gamez-Guadix et al., 2015), and another study revealed cyberbullying to be more common among university students than high school students (Sam et al., 2018).

Previous studies of university students in Turkey by Turan et al., (2011), Bayram and Sayli (2013), and Ertekin et al., (2017) reported cyberbullying rates of 56.1%, 30.6% and 31.1%, respectively. In studies with a different focus, providing no rates of cyberbullying or victimhood, it was argued that cyberbullying had a negative effect among university students, for both bullies and their victims, and that this stemmed from social relations and emotional imbalances (Akbulut & Eristi, 2011; Gezgin & Cuhadar, 2012; Ildirim Calici & Erdogan, 2017; Firat & Ayhan, 2016; Ozden & Icellioglu, 2014; Celik et al., 2012).

There are many reasons why university students are at greater risk of becoming a victim of cyberbullying (Schenk & Fremouw, 2012; Myers & Cowie, 2017). University students are entering a new environment, where being with new people and communities can increase the risk of bullying. They also have greater freedom and more independence from their parents, which increases the risks faced by young people. Furthermore, people living away from their families may feel lonely, leading them to spend more time on the Internet. Studies have associated cyberbullying with the time spent on the Internet or on social media, arguing that the time spent online is positively correlated with the risk of being cyberbullied (Celik et al., 2012).

On the other hand, the widespread use of information technologies, especially among young people, has changed the way society accesses information, including interpersonal communication and interaction methods. In short, the developing technologies and the growing popularity of social networks among young people has increased the rate of cyberbullying (Myers & Cowie, 2017). In their study, Souza et al., (2018) reported cases of cyberbullying among university freshmen associated with both psychological reasons and the campus environment (bullying by senior classes, etc.). Conyne (2010) stated in his study that freshmen in particular are at risk of becoming the victims of all kinds of violence, since they lack a self-defense strategy. These high rates verify the presence of a cyberbullying problem in university environments.

Considering the prevalence of cyberbullying among university students and its unfavorable effects on the victims, it is clear that interventions are needed for its prevention. However, there is a lack of studies focusing on this issue, as intervention studies tend to focus on groups other than university students. Previous studies have concluded that young people need to be trained and their awareness and sensitivity need to be increased to avoid cyberbullying (Al Qudah et al., 2019; Souza et al., 2018).

Students should first develop a sensitivity to cyberbullying if they are to avoid becoming a cyberbully/victim. Cyberbullying sensitivity means avoiding behaviors that may result in being bullied while using such virtual tools as the Internet, mobile phones, etc., being aware of such threats and taking measures to avoid them, and looking out for possible threatening stimulants (Tanrikulu et al., 2013). The problem of cyberbullying has to date received very little scientific attention in university environments (Martinez-Monteagudo et al., 2019), and the number of studies into cyberbullying carried out among university-level nursing students is observed to be low (Seibel & Fehr, 2018).

Nurses are members of an occupational group that provides training, guidance and consultancy services within the scope of their roles as a trainers, consultants and advocates, aiming to safeguard, improve and maintain the health of individuals, families and communities. After graduation, they become the healthcare professionals who are closest to the community. Besides having knowledge of

all acute and chronic health problems, nurses should also be aware of and sensitive to cyberbullying, as a public health problem associated with such unfavorable health results as depression, anxiety, drug addiction and suicidal behaviors. Moreover, due to their important role in (cyber)bullying prevention and intervention, nurses have a double role in this context (as possible victims/perpetrators, but also as health professionals who have to deal with patients' victimization /perpetration). Accordingly, all nurses should undergo constant training in cyberbullying and its effects (Hutson et al., 2018), although as yet, the current curricula usually lack of classes focusing on this issue.

This study aims to define the sensitivity of university-level nursing students toward cyberbullying, while the applied cyberbullying training seeks to reduce cyberbully and victim rates. The object is to increase the level of sensitivity to cyberbullying among nursing students as healthcare professionals of the future, contributing both to their own well-being and to general societal health.

Study Hypotheses

H_1 : Cyberbullying training increases the sensitivity of nursing students toward cyberbullying.

H_2 : Cyberbullying training reduces the rates of victimization and bullying among nursing students.

Methods

Study Design: this non-randomized pretest-posttest control group design intervention study, the participants are tested for the dependent variable before and after the experimental procedure (Buyukozturk, 2009).The study design is presented in Table 1.

Participants: The study was conducted in the Departments of Nursing of two different universities in the spring term of the 2018–2019 academic year. Universities A and B had 840 and 884 nursing students, respectively. Neither of the studied departments had courses on cyberbullying in their curricula. To avoid the effect of interactions between students, a block sampling method was used. The universities were randomly (coin-toss method) assigned as the study and control groups, with the 418 students studying at university A and 328 students studying at university B being selected as the study and control groups, respectively. The inclusion criteria included studying in the department of nursing of one of the predetermined universities, being older than 18 years of age and willing to take part in the study. Those who did not continue their education and those who stated a desire to leave the study were excluded (*n*:21).

Data collection tools: The study data were collected using the Personal Information Form, the Cyberbully/Victim Scale and the Cyberbullying Sensitivity Scale.

Personal Information Form: This comprises 19 items, collecting information on the students' age, gender, grade point average, place of residence, exclusive access to a computer and duration of daily Internet use. The form was created based on a literature review made by the researchers (Uysal et al., 2014; Firat & Ayran, 2016; Akbulut & Eristi, 2011), and assessed by two professors specialized in pediatric nursing.

Cyberbully/Victim Scale: This 19-item scale, developed by Ayas and Horzum (2010), measures the cyberbullying and victimization levels of "cyberbullying" and "victimized" students. The scale requires the students to grade how often they use particular statements or carry out the acts defined in the cyberbully scale, and how often they are exposed to the statements and acts mentioned in the cyber victim scale. The 5-point Likert-type scale, which allows individuals to express the extent to which they agree with a particular statement, is scored as follows: "always (5), frequently (4), occasionally (3), rarely (2) and never (1)." The minimum and maximum scores of both the cyberbully and victim scales are 19 and 95, respectively, with a higher score indicating more severe cyberbullying and victimization (Ayas & Horzum, 2010). Based on a study conducted with university students, the internal consistency reliability co-efficient of the victim and cyberbully sections of the scale were found to be 0.73 and 0.74, respectively (Firat & Ayran, 2016). In the present study, the internal consistency reliability co-efficient was found to be 0.71 for the victim section and 0.76 for the cyberbully section.

Cyberbullying Sensitivity Scale: This scale was developed by Tanrıkulu et al. (2013) to determine the cyberbullying sensitivity, and

its validity and reliability were tested on high school students. The three-item Likert type (Yes: 3 points, Sometimes: 2 points, No: 1 point) cyberbullying sensitivity scale comprises 14 items and a single factor and it explains 46.65 per cent of the total variance. The scale has the maximum and minimum scores are 42 and 14, respectively (Uysal et al., 2014), with higher scores indicating greater sensitivity toward cyberbullying. The Cronbach's alpha coefficient of the scale as a whole was found to be 0.79, while the Cronbach's alpha coefficient of the present study was found to be 0.75.

Procedure: Cyberbullying training: The cyberbullying training course was developed by the researchers based on a literature review, and aimed to increase the sensitivity of university students to cyberbullying, while also providing them with information and behaviors that may help reduce cyberbullying and victimization in the group. The training provides information and examples on the causes and consequences of cyberbullying, and the methods of fighting against and preventing such acts. It further includes such topics as the appropriate use of communication tools, and the conscious and controlled use of technology. A draft training plan was reviewed and assessed by two professors specialized in pediatric nursing, and by two professors specialized in educational sciences. The training content was reviewed based on the recommendations of the experts, and the training was planned to be applied in two sessions per week – each lasting 60 to 90 minutes – considering the length of the lectures and the content of the training. The sessions were defined as follows: 1) Recognizing cyberbullying 2) Conscious and controlled use of technology. The training content is presented in Table 2. Power Point presentations prepared by the trainers in line with the content of the training were used in the training sessions. Each session followed the same routine: the trainers gave a briefing about the topic and content, followed by PowerPoint presentations, case studies and discussions. The students asked questions and shared their experiences through question and answers during and after the presentations.

Implementation of the Study: The Department of Nursing at the university assigned as the study group was contacted, hours suitable for the schedule of the students were identified, and the interviews were scheduled accordingly. The interview hours were announced on the student notice board of the faculty, and students were asked to participate. The students who attended the interview during the defined hours were informed about the study, and those that volunteered took the pretest (Cyberbullying Sensitivity Scale, Cyberbully/Victim Scale). After the pretest, the participant students were informed about the training schedule, and were asked to participate in those training sessions. The posttest was applied 4 weeks after the training. The Department of Nursing at the university assigned as the control group was contacted to define the hours suitable for the students' schedule. The students were informed about the study during the pre-determined hours, and those who volunteered to take part in the study took the pretest. The posttest was applied 4 weeks after the finalization of the training sessions of the study group. The students in the control group received no training in cyberbullying. Face-to-face training was planned for the control group after the finalization of the study, although it could not be put into practice due to the pandemic. Accordingly, the training presentations were sent to the department to be forwarded to the students via e-mail, with any questions raised and answered also via e-mail.

Data Analysis: The data analysis was carried out using the SPSS 21 software package. The level of significance was accepted as <0.05 in the analyses of all data. The independent variable of the study was cyberbullying training, while the dependent variables were the mean scores obtained from the scales. Categorical variables were expressed as frequencies and percentages, while continuous variables were expressed as mean and standard deviation. Shapiro-Wilks and Levene Tests were applied to test normality of the data distribution and to determine the homogeneity of variances, respectively. First of all, a Chi-square test was used to compare the sociodemographic variables of the groups. Secondly, the mean pretest and posttest scores were compared to assess the impact of the training. To this end, an Independent sample t-test and a Dependent group t-test were conducted to allow a comparison between the groups (study and control) and within the

groups, respectively. In the event of a significant difference between the groups or variables, Cohen's d effect size was calculated to determine the efficacy of the training. A Cohen's d value of <0.2 was accepted as indicating a poor effect, while a value of between 0.5 and 0.8, and a value >0.8 indicated moderate and strong effects, respectively (Buyukozturk, 2009).

Ethical Approval: This study was carried out in accordance with the recommendations of Ethics Committee of the Ankara University (dated 03/21/2019 and numbered 07/140). All participants gave written informed consent in accordance with the Declaration of Helsinki (revised in 2020).

Results

The mean ages of the study group and control group participants were 20.22±1.30 and 21.15±1.50, respectively. Table 3 compares the study and control groups based on sociodemographic variables.

First of all, a Shapiro-Wilk test normality analysis was applied. The pretest mean score findings suggested that study and control groups met the normality hypothesis in the sensitivity scale (*S-W* = 0.85, *p*>.05 for the study group and *S-W* = 0.89, *p*>.05 for the control group), victim scale (*S-W* = 0.83, *p*>.05 for the study group and *S-W* = 0.88, *p*>.05 for the control group) and the bullying scale (*S-W* =0.84, *p*>.05 for the study group and *S-W* = 0.81, *p*> 0.05 for the control group).

Based on these results, the mean pretest and posttest scores were compared to assess the impact of the training. To this end, an Independent sample t-test and a Dependent group t-test were conducted to allow a comparison between the groups (study and control) and within the group, respectively. The analysis results are presented in Table 4.

According to the analyses, the study group's pretest and posttest sensitivity scale scores were statistically significantly different (*p*=0.02). The effect size of such difference was observed to be 0.37, indicating a poor effect. The two groups' sensitivity scale posttest results were found to be statistically significantly different (*p*=0.04). Based on an effect size analysis comparing the pretest and posttest scores, Cohen's d value was found to be 0.43, indicating a medium level effect.

The two groups' cyber victimization scale posttest results were found not to be statistically significantly different (*p*=0.13), while both study and control groups' in-group results indicated a statistically significant difference. The Cohen's d effect size analysis showed a low and a medium level effect in the study (*d*=0.36) and control (*d*= 0.42) groups, respectively.

The study and control groups' cyberbullying scale pretest and posttest scores indicated no significant difference within or between the groups (*p*>0.05).

Table 1. Pre-Test and Post-Test Control Group Design in Non-Randomized Groups

Group	Pretest	Experimental procedure	Posttest
Study Group	T1	Operation with education	T2
Control Group	T1	No education	T2

Table 2. Training Content

Week (session)	Topic	Content	Duration	Teaching methods and techniques
1st week	*Recognizing cyberbullying*	Helping participants identify cyberbullying behaviors Explaining types of cyberbullying Presenting the causes and consequences of cyberbullying	60–90 min	Lecture, question and answer, discussion

2nd week	*Conscious and controlled use of technology*	Conscious and controlled use of information and communication tools (telephone, tablet, laptop, computer, etc.) Raising awareness and providing information about the safe use of social media	60–90 min	Lecture, question and answer, discussion

Table 3. Descriptive Characteristics of the Participants and a Comparison of Pretest Scores

Variables	Study Group	Control Group	Test statistics	p
	N (%)	N (%)		
Gender				
Female	349 (83.5)	293 (89.3)	χ^2: 6.156	0.04*
Male	69 (16.5)	35 (10.7)		
Family income				
Income lower than expenses	75 (17.9)	76 (23.2)	χ^2:7.109	0.06
Equal income and expenses	310 (74.2)	216 (65.8)		
Income higher than expenses	33 (7.9)	36 (11.0)		
Residence				
With family	142 (34.0)	96 (29.3)	χ^2:80045	0.09
In a dormitory	238 (56.9)	203 (61.9)		
In a house with roommates	38 (9.2)	29 (8.8)		
Duration of Internet use				
0-1 Hours	9 (2.2)	6 (1.8)		
1–2 hours	55 (13.2)	44 (13.4)	χ^2:6.467	0.16
2–4 hours	156 (37.3)	137 (41.8)		
4–5 hours	100 (23.9)	88 (26.8)		
More than 5 hours	98 (23.4)	53 (16.2)		
Have you ever heard of the concept of cyberbullying?				
Yes	252 (60.3)	233 (71.0)	χ^2:10.028	0.01*
No	166 (39.6)	95 (29.0)		
Should university students be trained in how to use technology?				
Yes	382 (91.4)	286 (87.2)	χ^2:3.450	0.07
No	36 (8.6)	42 (12.8)		

Should nursing students be trained in how to use technology?				
Yes	371 (88.8)	284 (86.6)	χ^2:0.808	0.37
No	47 (11.2)	44 (13.4)		
Total	**418 (100)**	**328 (100)**		

P<0.05; χ^2: Chi-square analysis

Table 4. Effects of Cyberbulling Education

Sensitivity Scale	**Study Group**	**Control Group**	**t***	**p**
	Mean±SD	**Mean±SD**		
PreTest	36.86±5.52	37.16±5.67	-.736	0.46
PostTest	39.14±6.57	36.73±4.48	2.081	0.04
t/p**	-3.705/0.02	1.127/0.260		
Cyber-Victimization Scale				
PreTest	22.54±7.46	21.45±5.71	2.192	0.02
PostTest	25.44±8.32	24.48±8.48	1.516	0.13
t/p**	-5.234/0.00	-5.327/0.00		
Cyberbullying Scale				
PreTest	19.88±5.46	19.34±2.21	1.688	0.06
PostTest	20.19±3.63	19.76±2.87	1.678	0.09
t/p**	-.970/0.33	-1.002/0.24		

*: Independent sample t-test **: Dependent group t-test

Discussion

The results obtained from this study analyzing the efficacy of cyberbullying training in nursing students indicated that the training had a medium-level impact on the students' cyberbullying sensitivity and victimization levels. In the present study, the students' mean pre-training cyberbullying sensitivity scale scores were 36.86 (*sd*:5.52) and 37.16 (*SD*:5.67) in the study and control groups, respectively. Previous studies investigating the cyberbullying sensitivities of Turkish university students revealed mean student scores varying between 31.0 and 36.2, which are similar to our findings (Uysal et al., 2014; Ata & Adnan, 2016; Odaci & Celik 2018; Gezgin & Cuhadar, 2012; Dikmen & Caglar, 2017). The pre-training sensitivity to cyberbullying in the study group was at medium-high level, and the related mean scores were observed to increase after training (Table 4). Considering the highest possible score of the scale, being 42 points, it can be concluded that the cyberbullying training helped the students reach a high level of sensitivity. Increasing the sensitivity to cyberbullying among students, and thus raising their awareness, can contribute greatly to their ability to protect themselves from cyberbullying, to coping with cyberbullying more effectively and to avoiding bullying behaviors.

Studies have shown that 11%–60% of university students are victims of cyberbullying, while 4%–20.7% have engaged in cyberbullying (Walker et al., 2011; Al Qudah et al., 2019; MacDonald and Roberts-Pittman, 2010; Lindsay & Krysik, 2012; Zalaquett & Chatters, 2014; Musharraf & Anis-ul-Haque, 2018; Martinez-Monteagudo et al., 2019; Myers & Cowie, 2017; Sam et al., 2018). The present study assessed the cyber victim and cyberbully statuses of the students using a scale, and concluded that the rates of cyberbullying and victimization were low. This can be attributed to the nature of the nursing profession, which is based on human needs. Founded with a view to providing service to the community, the nursing profession is today focused on protecting and improving human health, caring for patients and helping patients feel safe (Atabek Asti & Karadag, 2013). The results of the present study, therefore, suggest that nursing students act in accordance with the role associated with their profession, and refrain from engaging in such unfavorable behaviors as cyber bullying.

The present study revealed that the training increased the students' cyber victim scale scores (Table 4), which indicate that the students were not aware of being cyberbullied before the training, or that they were unable to adequately explain themselves. The training may have revealed their cyber victim status by increasing their sensitivity to cyberbullying. The scores of the control group also increased, which is probably due to the fact that interest in the subject was increased after the pretest, leading to increased awareness among those students. It is thought that planned and continuous training will decrease cyber victim rates in the long term. The study group's cyberbully scale scores were lower than their victim scale scores. Such low scores obtained from the cyberbully scale can be attributed to the nature of nursing – a profession that adopts such high human values as humanism and pragmatism. The training had no effect on the participants' cyberbully status, which indicates that the bullying problem cannot be resolved through training alone, and that psycho-behavioral interventions may be required.

As educators, the more we increase our students' sensitivity to cyberbullying, the more we can contribute to lowering cyber victim and cyberbullying rates. There have been many studies suggesting that educators should be trained in cyberbullying, as this will allow them to teach their students cyberbullying prevention strategies and help victims feel understood (Walker et al., 2011; Zalaquett & Chatter 2014; Akbulut & Eristi, 2011). Such a sense of support may positively change ideas and the attitudes toward cyberbullying. The present study revealed that cyberbullying training increased the sensitivity of university students toward cyberbullying. In the study by Akbulut and Eristi (2011), it was suggested that the ideas and attitudes of individuals toward cyberbullying can be changed through training. Similarly, in a study in which graduate students received empathy training, cyberbullying rates were observed to reduce (Doane et al., 2013). Preventive training should thus be added to the curriculum to reduce cyberbullying and victimization rates among university students, and to increase their sensitivity (Al Qudah et al., 2019).

Prior to the study, a vast majority of the study group participants when compared to the control group stated that they had never before heard of the concept of cyberbullying (Table III). From the increase in the awareness of the study group after the training, it can be concluded that the participants became more sensitive to acts of cyberbullying they encountered in virtual settings, and that they began to take measures against such acts to ensure their personal safety. Furthermore, a vast majority of both groups answered "yes" to the question "Should training be provided in the conscious and controlled use of technology in your university?", which indicates a need for such training among students.

Implications

We know that cyberbullying is an important psychosocial problem that particularly concerns young people. If it cannot be solved in university youth, it may cause individual and psychosocial problems in the future. For this reason, it is necessary to make short but continuous education interventions integrated into curriculum rather than complex interventions. The results of the study revealed a significant increase in sensitivity of

the study group toward cyberbullying after training. The long-term comprehensive interventions applied in earlier studies may not be practical for university students, and so the results of this study provide significant data for potential training content to be planned in the future. It could also be concluded from the present study that short-term continuous training sessions, if integrated into the curriculum, could ensure students are kept informed about cyberbullying, thus raising their sensitivity. Nursing students should be trained in cyberbullying.

Strengths and limitations: Unlike the long-term cognitive and behavioral interventions reviewed in literature, this study evolved around a 2-week face-to-face training intervention that was based on mutual interaction. The long-term comprehensive interventions applied in earlier studies may not be practical for university students, and so the results of this study provide significant data for potential training content to be planned in the future. It could also be concluded from the present study that short-term continuous training sessions, if integrated into the curriculum, could ensure students are kept informed about cyberbullying, thus raising their sensitivity.

The study results cannot be generalized to other nursing students, since the study was conducted at only two universities in XX, which is a limitation of the present study. Further studies are needed to monitor the long-term results of cyberbullying training provided to the nursing students of all universities across XX.

Conclusions: This is the first study aiming to reduce cyberbullying and victimization rates among nursing students, and to increase their sensitivity on this issue through cyberbullying training. The results of the study revealed a significant increase in sensitivity of the study group toward cyberbullying after training. Increasing the sensitivity of nursing students toward cyberbullying is significant, since it will reflect on the community they serve in the long term. The results of this study highlight the impact of cyberbullying training on university students studying in Faculty of Nursing, Ankara University. Students should be trained in how to use the Internet and communication technologies safely, how to report cyberbullying, and how to cope with its unfavorable impacts. Universities, on the other hand, should develop education policies that allow proper adjustments to be made at a university scale to avoid such problems. Furthermore, classes should be added or academic activities should be organized in faculties to raise cyberbullying awareness, and the continuity of such training should be ensured.

Ethical approval and consent to participate: This study was carried out in accordance with the recommendations of Ethics Committee of the University (dated 03/21/2019 and numbered 07/140). All participants gave written informed consent in accordance with the Declaration of Helsinki (World Medical Association, 2013).

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