Effect of Educational Program on Social Media Cyberbullying among Nursing College Students at Benha University

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Abstract

Cyberbullying is a major concern among university students, negatively impacting their psychosocial health and academic performance. ***Aim of study:*** evaluate the effect of educational program on social media cyberbullying among nursing college students at Benha University**.** ***Design:*** Quasi-experimental design was used. ***Setting:*** This study was conducted at Faculty of nursing, Benha University. ***Subjects:*** This study was carried on 1029 nursing students. ***Tools of data collection:*** there were three tools used: **Tool I**: **Structured Interviewing Questionnaire:** It was divided into two parts. **Part one:** Personal characteristics of studied, **Part two:** Social media cyberbullying related data. **Tool II: Structured knowledge Questionnaire** to assess cyberbullying knowledge and **Tool III: Cyber-Aggression Scale (CYB-AGS)** to assess cyberbullying behavior**.** The study results showed that after program most of studied students had satisfactory total knowledge about cyberbullying. In addition to highly statistically significant negative association between knowledge and cyberbullying behavior was found post program than preprogram. **Conclusion:** The educational program was very effective in promoting students' knowledge and behavior regarding cyberbullying **.** **Recommendations:** Increasing awareness about cyberbullying and importance of adopting preventive strategies to control it through health education programs to all community especially were needed.

Keywords: Cyberbullying, Social Media, Nursing College Students

Introduction:

The popularity of social media and online forums, make people frequently publish comments, images, posts, and other content that can be seen by both acquaintances and complete strangers. A person's internet activity, including any bad, unpleasant, or hurtful stuff they share, becomes a kind of irreversible public record of their beliefs, actions, and conduct. This public record, which might be viewed by institutions including schools, employers, universities, clubs, and others conducting background checks on potential employees at any time in the future, is an example of cyberbullying **(stopbullying.gov, 2020).**

Adolescence is marked by numerous changes in physical, emotional, and social aspects. This process has various interpretations and conceptualizations that highlight its vulnerabilities and potentialities. It is a complex, historically and socially constructed period of development during which risk behaviors such as the use of illicit substances, unprotected sexual intercourse, violent situations, and infringing behavior, among others, can manifest. Violence among peers in university stands out as the most common of these behaviors. Because adolescents spend so much of their time at university, conflict, bullying, and cyberbullying can become commonplace in interactions with peers **(Alencastro et al., 2020).**

University-level cyberbullying can be considered as a transitional stage in the continuity of this behavior from childhood and adolescence into adulthood **(Faucher, Jackson and Cassidy, 2014).** Bullying committed online is known as cyberbullying. Social media, chat services, gaming platforms, and mobile devices are all potential venues. It is consistent behavior meant to frighten, infuriate, or degrade the targets **(UNICEF, 2020).** Because cyberbullying does not require physical strength or membership in a dominant group as conventional bullying does, teens are more likely to participate in it due to their online anonymity **(Donat, 2019)**

There are two sorts of cyberbullying: direct and indirect. While indirect cyberbullying can involve a group of people, direct cyberbullying simply involves the

aggressor and the victim. A post on social media mocking someone and receiving a lot of comments and shares is a great example of indirect cyberbullying. The effects of indirect cyberbullying are more severe and harmful. According to the following, there are various types of cyberbullying: flaming, masquerade, denigration, impersonation, outing, harassment, trickery, exclusion, and cyber stalking **(Vyawahare & Chatterjee, 2020).**

The research identifies six distinct social media dynamics that may be encouraging or causing cyberbullying, including: Social media sites guarantee anonymity or privacy, Sharing is encouraged by social media, Face-to-face interaction is not a part of social media communication, Justice appears to imply victimizing the bully on social media, A mob mentality is fostered by social media, and Everyone wants likes, shares, and views **(Organization for Social Media Safety, 2020).** Additionally, identified several factors that contribute to cyberbullying, including: bullying generates more bullying, the victim "deserves" it, Cyberbullies feel invincible, they experience peer pressure as well, and they are bored (**Alt, 2018).**

Cyberbullying has been shown to have long-term negative consequences on the victim, stressing them out and keeping them sad or anxious all the time, which can affect their sleep and food. In contrast to physical bullying, cyberbullying posts can be shared with people all over the world with a mouse click or finger tap, which increases the victim's anxiety and worry. Cyberbullying can also undermine one's sense of self-worth and self-confidence, which can exacerbate melancholy and anxiety. Cyberbullying is a problem that is crucial because the perpetrators are often unknown. Cyberbullying caused its victims to experience jitteriness, anxiety, sadness, and in some cases, suicidal thoughts (**Kumari & Singh, 2020)**.

In terms of mental health, self-esteem, and interpersonal relationships, cyberbullying affects psychosocial adjustment. Most significantly, because victims desire to prevent potential harm from their relationships, cyberbullying may affect victims' trust in their social interaction partners **(Sung, 2018).** Furthermore, because material may be instantly shared online at any time and from any location, with potentially an unlimited audience, cyberbullying results in psychological and emotional harm to victims that is equivalent to or greater than that caused by traditional forms of bullying. This may ultimately result in long-term issues. According to research, the majority of those who are bullied online feel depressed, anxious, distressed, angry, hopeless, afraid, and humiliated **(Lucas, 2018).**

Cyberbullying is a violent new form of hostility that has many negative outcomes. Cyberbullying has been connected in research to signs of low self-esteem, lower self-confidence, and having a detrimental effect on relationships. There are also reports of other symptoms, such as depression, anxiety, and suicidal thoughts **(Dredge, Gleeson & Garcia, in Butt, Jamil & Khalid, 2019).**

Increase your social media participation, understanding, and knowledge, and be aware of current trends, are some advice for parents and university officials. Observe how much time teenagers spend online at home or in school. Keep an eye out for rapid mood changes in adolescents that are related to technology, such as retreat, loneliness, lack of motivation, changes in routine, friends, refusal to communicate, changes in social activities, changes in food, and changes in hygiene. Encourage open dialogue, inquire about cyberbullying, and express your understanding of its circumstances and seriousness **(Florang, 2019).**

It is crucial to not downplay, avoid, or avoid talking about issues associated to cyberbullying. Don't overstate or overdramatize the effects of cyberbullying. Encourage assistance tactics without punishment (removing technology or deleting social media accounts). Students should adopt a supportive atmosphere where everyone is willing to step in to stop cyberbullying. Create safety and action strategies for dealing with cyberbullying. Advocate for the creation of laws against cyberbullying (university, legal, healthcare, and social media providers). Inappropriate cyber-regulation skills should be taught, practiced, acted out, and modeled.

Encourage effective reactions to cyberbullying **(Florang et al., 2018).**

Talking to someone in person about cyberbullying before it becomes a problem is the best way to stop it. Here are some suggestions for stopping cyberbullying: Speak with young people about cyberbullying, Have a "house rule" that no one is permitted to send hurtful words via any social media platform. Encourage children to inform an adult if they encounter cyberbullying. Tell them to be cautious with their passwords. Inform them that electronic messages are not always secure. Caution your child against sharing private information online. Avoid letting children use the internet in their bedrooms, and think about establishing a "home rule" requiring youngsters to hand up their electronic devices to a parent at night **(Alt, 2018).**

Significance of the study

According to recent studies, the percentage of people who have experienced cyberbullying at some point in their lives has doubled, from 18% in 2007 to 36% in 2019, and this number is only expected to rise given how heavily teenagers and young adults use technology, social networks, and mobile devices. In light of this, it is crucial to research the causes, methods, and preventions of cyberbullying **(Patchin, 2020).**

In Egypt, it was discovered that among more than 600 primary school kids, 21.7% reported engaging in bullying, 28.6% reported experiencing bullying, and 9.5% identified as both bullies and victims **(Zych, Baldry & Farrington, 2017).**

Purpose of this study was to evaluate the effect of educational program on social media cyberbullying among nursing college students at Benha University.

Research hypothesis: The following research hypotheses were developed to achieve the studies purpose:

H1: After completing an educational program, the mean knowledge score of nursing students will be significantly higher than it was before

H2: The mean social media cyberbullying behavior score among nursing students at post educational program will be lower than pre-program.

H3: There is a correlation between knowledge and social media cyberbullying among nursing students.

Subject and Methods

Research design:

Quasi-experimental design with one group pre/post was utilized. This design aimed to establish the cause and effect relationship between an independent and dependent variable. The only difference is that the quasi-experimental design employs non-random criteria while assigning subjects to groups.

Research setting:

The study was conducted at Faculty of Nursing Benha University which is affiliated to the ministry of higher education, consists two buildings of four floors, have 11 nursing lab, library, 4 auditoriums and 6 classrooms.

Sample: A convenient sample.

Sample Size: Based on the outcomes of nursing students from the previous academic year, the sample size was determined. Using the following equation, a total of 1029 nursing students throughout various academic years were studied **(Yamane, 1967).**

$$n = \frac{N}{1+N(e)^2}$$

Where: n= sample size
N= total population
e= margin error (0.05)

Level	N (total population)	n (sample size)
First year	670	251
Second year	1210	301
Third year	682	253
Fourth year	506	224
Total	3068	1029

Tools of the study:

Tool I: **Structured Interviewing Questionnaire:** It was divided into two parts. **Part one:** Personal characteristics of studied sample as age, gender, marital status, academic year, and residence, **Part two: Social media cyberbullying related data** such as Have you ever heard of cyberbullying? and Have you ever been cyberbullied? **(Surveymonkey, 2020).**

Tool II: Structured knowledge Questionnaire was developed and written in Arabic language by the researcher after reviewing relevant literature **(Sticca et al., 2015 and Wikipedia, 2020)** and agreed upon by a panel of expertise to assess student's knowledge regarding cyberbullying inform of multiple choose question. It consisted of 6 items namely: definition of cyberbullying, causes of cyberbullying, psychosocial effect of cyberbullying, effect of cyberbullying on academic performance, how to confront cyberbullying and strategies for cyberbullying prevention.

Scoring system: Nursing students were instructed to select every right answer, which differed for each question. The total score was categorized as follows: unsatisfactory knowledge < 60% of total knowledge score and satisfactory knowledge > 60% of total knowledge score.

Tool III: Cyber-Aggression Scale (CYB-AGS): Developed by **Buelga et al., (2020).** It measured how many times an adolescent has involved in cyberbullying in the previous 12 months. It consists of 18 items divided into: that comprised 10 items. In order to assess both direct and indirect cyberbullying, the revised CYB-AGS scale has eight additional items relating to new cyberbullying behaviors. Direct cyber-aggressions" refers to actions and verbal and social attacks that are made directly against another individual. Information manipulation, identity fraud, and hackers are examples of actions used in indirect cyber-aggressions.

Scoring system: The questionnaire consisted of five point Likert scale, strongly disagree, disagree, 1 (never) to 5 (always). The overall score was divided into the following categorize: mild cyberbullying: < 60% of total cyberbullying score, moderate cyberbullying: 60-75% of total cyberbullying score and highly cyberbullying: >75% of total cyberbullying score.

* **Validity**: Five nursing professionals examined the tools to determine the validity of their content. Any advice was implemented. The validity of Structured Interviewing Questionnaire, Cyber-Aggression Scale were 98%, 96%, and 98% respectively.

* **Reliability.** It demonstrated that, Cronbach's alpha coefficient for Structured knowledge Questionnaire and Cyber-Aggression Scale were (0.89 & 0.87) respectively.

Pilot study: It was conducted on 10% of the total sample was (103), there were not included in the study sample. For the purpose of evaluating tool's the visibility and clarity. Accordingly, there were no modifications were done.

Ethical considerations: Each nursing student was given a brief explanation of the study's goal by the researchers, who also informed them that the data collected would be kept confidential and utilized exclusively for the purpose of research. Nursing students are allowed to withdraw from research at any time. They were asked to give their verbal consent to participate in the study.

The field work: The following order was used to collect the data:

- After explaining the study's goal to the dean of the faculty of nursing at Benha University, permission was officially obtained to conduct the study. Following that, a structured interview was done with nursing students who were eligible for the study to describe its goals, ensure anonymity, and gain verbal informed permission. From September 2019 to February 2020, data gathering lasted six months.

Procedures: The educational program was divided into the following stages:

Assessment Phase: Before implementing the intended program, interview with each nursing student was conducted in order to gather baseline student data utilizing all available study instruments.

Implementation Phase: Each and every subject under study received the program. They were classified into four groups and each group represents an academic year. The program was implemented in order to provide the students with needed information and promote their behavior regarding cyberbullying. It was implemented in the form of sessions that lasted for about 30-45 minutes and 10 minutes for break. Each group attended five sessions, scheduled according to available time of each an academic year per week. Each session had its own title and objective according to its content. The program was extended for 6 months started from September 2019 to

February 2020. The first session was carried out during assessment phase, involved (overview about cyberbullying), the second session involved (definition and causes and high-risk group of cyberbullying) while the third involved (consequences of cyberbullying on individual and community and cyberbullying punishment). Fourth session (strategies used to confront cyberbullying) and fifth session (summarize the content of all previous session, and collect post-assessment data). Each participant in the study received the instructional booklet.

A booklet containing the program's content, written in simple Arabic and accompanied by images and illustrations to assist students understand the content. The following teaching aids were created specifically for the program: a booklet, a flipchart, an interactive lecture, a discussion and questions, video, and real-life scenarios. Nurse students' questions were discussed at the end of each session to correct any misunderstandings that had occurred.

Each session was concluded with a summary of the information presented at the beginning, using straightforward language to be accessible to all students in order to guarantee that the students understood the program content.

Evaluation Phase:

Immediately after implementation of the program, each student in the study was asked to evaluate knowledge using Tool II: (Structured knowledge Questionnaire) and (Tool III: Cyber-Aggression Scale (CYB-AGS). After finished program, the researchers took students' feedback about the program.

Table (I): Students' feedback about the program objective, content, teaching methods and media used.

Item	Poor		Good		Excellent	
	No.	%	No.	%	No.	%
1-The objectives of the educational program:						
▪ Introduction about the program	14	1.4%	113	11.0%	902	87.7%
▪ Clarity of objectives	100	9.7%	187	18.2%	742	72.1%
▪ Extent of achieving objectives	82	8.0%	170	16.5%	777	75.5%
▪ The extent of organizing the program	102	9.9%	89	8.6%	838	81.4%
▪ Duration of the program	86	8.4%	121	11.8%	822	79.9%
2- The content of the educational program:						
▪ Comprehensive content	98	9.5%	113	11.0%	818	79.5%
▪ Cover educational needs	87	8.5%	154	15.0%	788	76.6%
▪ The extent of benefit	66	6.4%	148	14.4%	815	79.2%
▪ The extent of suspense	81	7.9%	146	14.2%	802	77.9%
▪ How it relates to objectives	102	9.9%	127	12.3%	800	77.7%
3- Teaching methods in the educational program						
▪ Sufficiency	103	10.0%	124	12.1%	802	77.9%
▪ How is it diverse	100	9.7%	71	6.9%	858	83.4%
▪ Suitability	56	5.4%	72	7.0%	901	87.6%
4- Teaching Aids						
▪ The extent of usage	49	4.8%	243	23.6%	737	71.6%
▪ The extent of suitability	5	0.5%	127	12.3%	897	87.2%
▪ The extent of sufficiency	29	2.8%	118	11.5%	882	85.7%

Table I. Shows students' feedback about the program objective, content, teaching methods and media used, 87.7% & 87.6% of nursing student gave excellent feedback related to introduction about the program and suitability of teaching methods in educational program respectively.

Statistical Design:

The mean, standard deviation, and Paired T-test were utilized in the statistical presentation and analysis of the current study to compare the means of the groups before and after the program. ANOVA was used to compare mean between more than two groups, and independent t-test was used to compare

mean between two distinct groups. Indicator of Linear Correlation [r]. A p-value < 0.05 was considered significant, and <0.001 was considered highly significant.

Results:

Table 1. Presents personnel characteristics of students under the study, it was observed that, the mean age of participants was (20.28±0.9587) years. It also shows that (66%) were female, and (56.1%) were living in rural area and (29.2%) were in second year.

Table 2. Reveals cyberbullying related data of the studied students, which showed that, (76.4%) were not heard about cyberbullying and (75%) had not been cyberbullied. In addition, there was (75.2%) had not done cyberbullying, (73.9%) said that there is no policy to deal with cyberbullying and (58.1%) said that male were more at risk for cyberbullying.

Pre and post program mean knowledge scores of cyberbullying among the studied students was represented in table 3. There were highly statistically significant differences between the mean students' knowledge scores of pre-program and post-program (P<0.001**).

Figure 1. shows the distribution of studied students regarding to their total knowledge score about cyberbullying, it displayed that before program (86.6%) of them had unsatisfactory total knowledge about cyberbullying, while after program most of them (88.1%) had satisfactory total knowledge about cyberbullying**.**

Table 4. indicates a highly statistically significant mean score between total cyberbullying's behavior pre and post program among the studied students

Figure 2. displays that before program; 63.2% of the studied students had high cyberbullying behavior. While decreased and reached to 1.2% after program.

Table 5. reveals relationship between studied students' total cyberbullying knowledge mean score and their personnel characteristics pre and post program, it shows there were statistically significant differences in students age post program than preprogram while no statistically significant differences related to the remaining other items.

Table 6. reveals the relation between personnel characteristics of the studied students and their total cyberbullying behavior mean score pre and post program, there were only statistically significant differences post program in relation to residence while no statistically significant differences related to other items.

Table 7. shows the correlation between total cyberbullying knowledge and cyberbullying behavior scores of the studied student's pre and post program. It reflect that there was only highly statistically significant negative association was found among the studied students' knowledge and their cyberbullying behavior post program compared to preprogram.

Table (1): Distribution of the study group's students based on personnel characteristics (n=1029).

Variables	Frequency	%
Age in years		
18-<19	195	19.0
19-<20	293	28.5
20-<21	392	38.1
≥21	149	14.4
Mean ±SD	20.28±0.9587	
Gender		
Male	350	34.0
Female	679	66.0
Academic year		
First	251	24.4
Second	301	29.2
Third	253	24.6
Fourth	224	21.8
Residence		
Rural	577	56.1
Urban	452	43.9

Table (2): Distribution of studied students based on their cyberbullying related data (n=1029)

Items	Frequency	%
Have you heard of cyberbullying?		
No	786	76.4
Yes	243	23.6
Have you been cyberbullied?		
No	772	75.0
Yes	257	25.0
Have you ever done cyberbullying?		
No	774	75.2
Yes	255	24.8
Is there a policy to deal with this type of bullying		
No	760	73.9
Yes	269	26.1
From your point of view cyberbullying is more prevalent among		
Male	598	58.1
Female	431	41.9
Who are the people most vulnerable to cyberbullying?		
Any person	148	14.4
Rioters	236	22.9
Famous	505	49.1
The shy persons	140	13.6

Table (3): Pre and post program mean knowledge scores of cyberbullying among the studied students (n=1029)

Variables	Pre-program	Post-program	Paired t test	P value
Definition of cyberbullying	1.7658±0.98656	4.5053±0.72290	-200.139	<0.001**
Causes of cyberbullying	1.5199±0.74256	4.5053±0.72290	-798.644	<0.001**
Psychosocial effect of cyberbullying	1.9232±0.87715	4.8027±0.85355	-110.290	<0.001**
How to confront cyberbullying	1.7182±0.95841	4.7804±1.37103	-63.655	<0.001**
Effect of cyberbullying on academic performance	1.8241±0.87060	3.9125±0.71811	-235.836	<0.001**
Strategies for Prevention of cyberbullying	1.8290±0.84378	3.8873±0.74393	-281.634	<0.001**
Total knowledge	10.5802±2.42447	26.3936±2.41461	-274.202	<0.001**

<0.001** highly significant

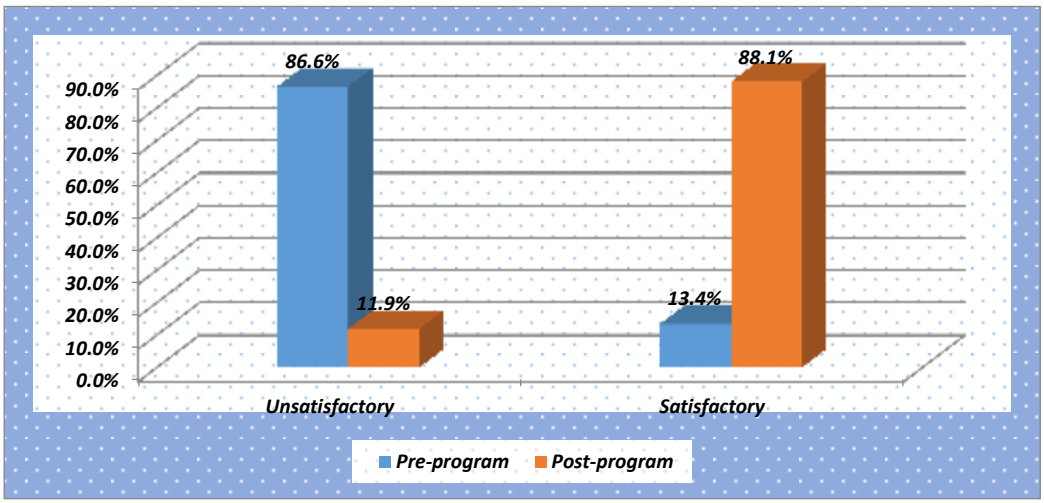

Figure (1): Distribution of studied students regarding their total knowledge score about cyberbullying pre and post program (n=1029)

Table (4): Pre and post program mean scores of cyberbullying behavior among the studied students (n=1029)

Items	Pre-program	Post-program	Paired t test	P value
1. I have insulted or ridiculed someone in social networks or groups like WhatsApp to really screw with or annoy him/her	3.4616±1.06489	1.4820±0.85808	-39.428	<0.001**
2. I have called someone's cellphone and hung up to bother or frighten him/her	3.4966±1.05271	1.3741±0.74001	-43.619	<0.001**
3. I have threatened someone to make him/her do things on the Internet or smartphone that he/she did not want to do (like recording him/herself on video, giving me money, doing bad things)	3.5190±1.04047	1.3304±0.69016	-45.990	<0.001**
4. I have told someone's secrets or revealed personal things about him/her in social networks or groups (WhatsApp, snapchat . . .	3.5092±1.03497	1.4082±0.79184	-43.223	<0.001**
5. To make fun of someone, I have made or manipulated videos or photos of him/her and uploaded or distributed them on social networks or by smartphone.	3.5355±1.01542	1.3557±0.73133	-46.035	<0.001**
6. I've logged into someone's profile or accounts, and he/she could not do anything about it.	3.4752±1.05704	1.4121±0.77239	-41.769	<0.001**
7. I have pretended to be someone else so I could say or do bad things on the Internet.	3.5063±1.02460	1.3975±0.76170	-43.538	<0.001**
8. I have purposely created a webpage, a forum, or a group just to make fun of someone and criticize him/her in front of everyone.	3.5559±0.97938	1.3761±0.75851	-46.508	<0.001**
9. I have put someone's cellphone number on the Internet and said bad or false things about him/her so that people would call him/her and get him/her into trouble.	3.5569±0.96026	1.3887±0.76175	-46.337	<0.001**
10. I have taken someone's smartphone and used it to send photos, videos, or mean messages to others to get him/her into trouble with them.	3.5559±0.98631	1.3596±0.74133	-47.057	<0.001**
11. I have criticized someone or made fun of comments, photos, or videos he/she uploaded to social networks or groups like WhatsApp.	3.3819±1.12320	1.4694±0.79901	-36.936	<0.001**
12. I have created a false profile on the Internet with someone's personal data in order to impersonate him/her saying or doing bad things.	3.5131±0.99467	1.4140±0.76882	-43.618	<0.001**
13. I have ignored and did not answer someone's messages or things he/she shared in groups or social networks, just to make him/her feel bad.	3.4412±1.05200	1.5121±0.85705	-38.142	<0.001**
14. I have provoked someone in social networks or groups by insulting or taunting him/her to make him/her angry and cause a big argument.	3.5063±0.99082	1.4519±0.80904	-42.302	<0.001**
15. I have eliminated or blocked someone from groups to leave him/her without any friends.	3.5510±0.91707	1.4917±0.85596	-43.256	<0.001**
16. I've stolen photos, videos, or private conversations and uploaded them or sent them to others.	3.4956±0.99083	1.4849±0.83748	-41.010	<0.001**
17. I have changed someone's password to social networks so that he/she could not access them.	3.3732±1.12225	1.4470±0.75653	-37.250	<0.001**
18. I sent someone taunt in messages to bother and annoy him/she	3.4490±1.04312	1.4879±0.82936	-39.076	<0.001**
Total Cyberbullying	62.8834±15.06316	25.6433±11.48727	-50.349	<0.001**

<0.001** highly significant

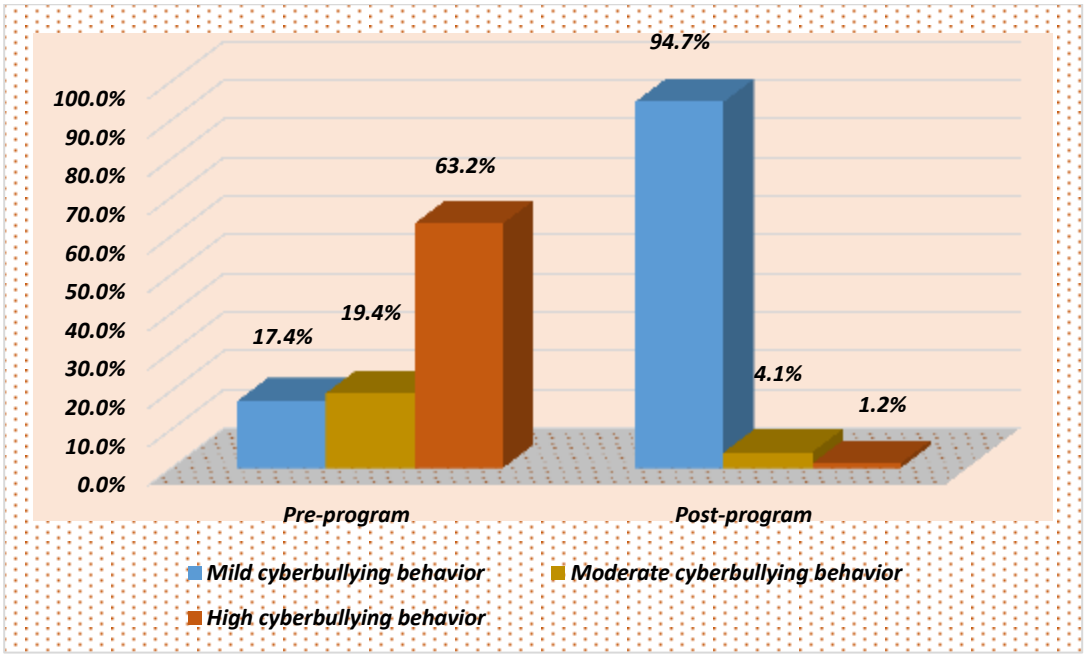

Figure (2): Distribution of studied students regarding to their total cyberbullying behavior pre and post program (n=1029)

Table (5): The relation between personnel characteristics of the studied students and their total cyberbullying knowledge mean score pre and post program (n=1029).

Variables	Pre-program knowledge score			Post-program knowledge score		
Age in years	**Mean ±SD**	**Statistical test**	**P value**	**Mean ±SD**	**Statistical test**	**P value**
18-<19	10.74±2.080	1.50	>0.05 (F test)	26.47±2.516	2.67	<0.05* (F test)
19-<20	10.63±2.522			26.52±2.466		
20-<21	10.39±2.480			26.14±2.337		
≥21	10.78±2.485			26.72±2.337		
Gender						
Male	10.57±2.387	0.138	>0.05 (Independent T test)	26.28±2.404	1.05	>0.05 (Independent T test)
Female	10.59±2.445			26.45±2.420		
Academic year						
First	10.72±2.141	0.435	>0.05 (F test)	26.48±2.471	1.18	>0.05 (F test)
Second	10.63±2.604			26.46±2.481		
Third	10.34±2.492			26.23±2.339		
Fourth	10.63±2.393			26.39±2.350		
Residence						
Rural	10.55±2.453	0.367	>0.05 (Independent T test)	26.37±2.414	0.549	>0.05 (Independent T test)
Urban	10.62±2.389			26.42±2.418		

<0.05* statistical significant >0.05 not statistical significant

Table (6): The relation between personnel characteristics of the studied students and their total cyberbullying behavior mean score pre and post program (n=1029).

Variables	Pre-program knowledge score			Post-program knowledge score		
Age in years	**Scale**	**Statistical test**	**P value**	**Scale**	**Statistical test**	**P value**
18-<19	25.72±12.481	0.983	>0.05 (F test)	64.4513±15.09528	1.54	>0.05 (F test)
19-<20	25.38±11.752			62.9693±15.12060		
20-<21	25.98±8.897			61.7653±15.81126		
≥21	25.60±12.480			63.6040±12.59763		
Gender						
Male	25.44±10.903	0.374	>0.05 (Independent T test)	62.1829±15.47012	1.05	>0.05 (Independent T test)
Female	25.73±11.774			63.2445±14.84767		
Academic year						
First	24.72±12.481	1.17	>0.05 (F test)	64.143±15.42035	1.18	>0.05 (F test)
Second	25.38±11.752			63.8505±15.00892		
Third	25.98±8.897			61.3992±15.16296		
Fourth	26.60±12.480			61.8482±14.48810		
Residence						
Rural	26.00±11.858	0.680	>0.05 (Independent T test)	62.6014±15.23749	2.17	<0.05* (Independent T test)
Urban	25.16±10.978			63.2434±14.84668		

<0.05* statistical significant >0.05 not statistical significant

Table (7): Correlation between total cyberbullying knowledge and cyberbullying behavior scores of the studied students pre and post program (n=1029)

Knowledge	Cyberbullying	
	R	**P value**
Pre-program	-0.053	>0.05
Post-program	-0.0461	<0.001**

<0.001** highly statistical significant >0.05 not statistical significant

Discussion:

The purpose of study was to evaluate the effect of educational program on social media cyberbullying among nursing college students at Benha University. According to Socio-demographic characteristics of the studied sample, the present study results showed that, it was observed that, the mean age of participants was (20.28±0.9587). It also showed that slightly more than two fifth were lived in urban area. These results agreed with those of **Hassan et al., (2019)** who pointed out that the mean age of nursing students were 19.8 ± 1.6 years and Almost a third of participants' were living in urban areas. Additionally, the current study found that almost two thirds of participants were female. These finding were not in accordance with **(Khine et al., 2020)** who stated that, 135 female from total 412 students (32.77%) participated in the study.

The current study revealed that about three quadrant of study subjects had not been cyberbullied and had not done cyberbullying. These findings were consistent with **Floros et al., (2013)** who found that 28.3% of the participants were victims of cyberbullying and 14.6% practiced it. Also, 22.5% of students practicing cyberbullying at least once **(Dilmac, 2009)**. Similarly, 16% of respondents acknowledged engaging in two or more cyberbullying activities during their university education in the study conducted by **Crosslin and Crosslin (2014)**.

The present study revealed that less than three fifth of studied subject said male were more at risk for cyberbullying. This is might be due to when confronted with a stressful event, males are more likely to exhibit direct forms of aggression and confrontation, whereas females are more likely to respond to stress through avoidance. This finding is supported by **Khamis (2015),** who reported that boys were more likely than girls to experience bullying. In another study by **Al Qudah et al., (2020)** who mentioned that cyberbullying was shown to differ significantly by gender, occurring more frequently in males than in girls.

Concerning students' knowledge about cyberbullying, there were deficient in knowledge before carrying out the program, this might be due to unavailability of educational programs to give students required information about cyberbullying. After implementation of the program, majority of students had satisfactory knowledge, **which supported research hypothesis (1)**, assuring the effectiveness of educational program, and indicating that, when the information is given to students in a simplified way their knowledge improves. These finding in the same line with **Toshack & Colmar (2012)** who found that following the program's implementation, the girls' comprehensive awareness of cyberbullying and safety measures increased.

Regarding cyberbullying's behavior, there were a highly statistically significant difference in the mean score between total cyberbullying's behavior pre and post program among the studied students, **which supported research hypothesis (2)** this might be attributed to that, educational program played more vital and essential part in such improvement. These finding in the same line with **Fraguas et al., (2020)** who said that Anti-bullying programs were successful in lowering bullying in general. Also, **Gaffney, Ttofi & Farrington (2019)** who conducted meta-analysis specifically in regard to variations in the effectiveness of school-bullying programs globally and the effectiveness of specific anti-bullying programs, and discovered that overall, programs were successful in reducing both victimization and perpetration of school bullying.

According to the relation between studied students' total cyberbullying knowledge mean score and their personnel characteristics pre and post program, there were statistically significant differences in relation to age post program, This finding is consistent with **(Hamal, 2017 & Alslman 2019),** who said that there is a significant association between age and cyber bullying.

This paper presents key findings and further analyses of a large-scale meta-analysis that explores the effectiveness of school-based anti-bullying programs **(i.e., Gaffney et al., 2019b)**. Overall, while school-bullying prevention programs are effective, there are significant differences between coun- tries, regional areas, and existing intervention programs.

Concerning, the relation between the studied students' total cyberbullying behavior mean score and their personnel characteristics pre and post program, there were statistically significant differences during post program in relation to residence. These results are consistent with **McQuillan, (2016)** who found that children living in urban areas were more likely to be cyberbullying victims than those living in rural or suburban areas. In addition, this study revealed that there was not statistically significant differences related to gender. This finding is contradicted with **Zalaquett and Chatters (2014),** who stated that cyberbullying in college differed by gender, with 15.5% of females reporting being cyberbullied compared to 3.6% of males. Likewise, Research by **Robers et al., (2015),** showed a higher number of female students are bullied at school when compared to male students, but a higher number of male students report being physically bullied and threatened with harm.

Furthermore, study results also showed the correlation between total cyberbullying knowledge and cyberbullying behavior scores of the studied students' pre and post program. Highly statistically significant negative association was found among the studied students' knowledge and cyberbullying behavior post program but not statistically significant negative association between them during preprogram, **which supported research hypothesis (3)** That means if student have a knowledge about cyberbullying that lead to decrease their cyberbullying behavior and vice versa. This indicated the impact of the program in educating students about the consequences of cyberbullying, which led to promote in their behavior.

A finding consistent with **Wölfer et al., (2014)** who found that the application of the Cyberbullying Awareness Program led to a significant decrease in the cyberbullying tendencies of the adolescents in the intervention group. Additionally, **Cantone (2015)** who revealed that interventions proved effective in reducing bullying.

The study limitation:

1. There are lack of prior studies on this topic.
2. Previous studies on this topic only examined factors.

Conclusion:

This study concluded that knowledge mean score of nursing students were significantly increased after program implementation. As well as, there was highly statistically significant negative association among the nursing students' knowledge and their cyberbullying behavior post program.

Recommendation:

The following suggestions are offered in the light of studies finding

- Health education initiatives were particularly needed to raise awareness of cyberbullying and the need to adopting preventive measures to reduce it.
- The media should play a significant role in spreading awareness of cyberbullying and its consequences among community members.
- Further researches are needed to create a strong preventative strategy and take effective countermeasures against cyberbullying and any associated problems.

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