CYBERBULLYING, VICTIMIZATION, STRAINS AND DELINQUENCY IN QATAR

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(Received 10 June 2022, revised 12 October 2022)

Abstract

The paper analyses the effects of strain variables (school delinquency, public disturbances, crimes, assaults, imprudent behaviour, violence, delinquency and negative emotions) on cyberbullying victimization of high school students in Qatar (N = 1733, 55% males, 45% of females). Findings indicate that a fifth of students reported bullying victimization and a tenth of cyberbullying. Results showed that strain variables could explain a 49% change in cyberbullying victimization. The Logistic regression model correctly classified 93.3% overall prediction of the cases. Significant gender differences were found in cyberbullying. Significant mean differences were found between bullied and non-bullied students at (α = 000) in all strain variables. This study supported our GST hypothesis that victimization of students' cyberbullying could lead to strains and delinquency. Implications for school-based prevention efforts are discussed.

Keywords: bullying, cyberbullying, strains, delinquency, Qatar

1. Introduction

General bullying in its effective forms (face-to-face or cyberbullying) is a criminological, social and public health problem associated with harmful, mental, psychological, health, physical short term and long-lasting consequences for the victims. Bullying is a form of salient violence perpetrated by peers with unequal power. One applies force, pressure, or violence, directly or indirectly, intentionally or unintentionally, to the weaker party [1]. On the one hand, the most widely used definition of bullying states, "a person is bullied when he or she is exposed, repeatedly and over time, to negative actions on the part of one or more other persons" [2]. Physical, verbal, psychological (emotional pressure, excluding, side-lining) and threatening (demanding money, taking possessions and homework), hurting one's feelings, insulting, stigmatizing them, or an attack on personal possessions are all examples of forms of bullying [1]. In addition, there are two types of bullying: intentional bullying, which is harmful, and unintentional bullying, which is harmless and has no malicious intent. Other types, such as attacks on the victim's ethnicity or culture, are known as group

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peer bullying, whereas attacks on the victim's personality are personal peer bullying. It can also be direct or indirect by harming the victim's social standing and sense of belonging [1]. On the other hand, cyberbullying is a form of deviant behaviour involving digital technology. It can occur in the virtual world (e.g. social media, messaging platforms, gaming platforms and mobile phones). Cyberbullying is repeated cyber behaviour aimed at frightening, angering, or shaming the target. Social media lies or posting embarrassing photos or videos of another person, as well as threatening, abusive, or hurtful messages via messaging platforms and impersonating someone, and sending mean messages to others on their behalf or through fake accounts [3].

Growing evidence from around the world reporting the prevalence of bullying perpetration or victimization among college and university students. For instance, Lund and Ross found that cyberbullying victimization was reported by 10-15% of students during college [4]. About 20% of students reported perpetrating non-cyber bullying in college, with 5% reporting cyberbullying in fourteen peer-reviewed studies. To a greater extent, men were more likely than women to report the crime. From 8.6% to 43.3% of the population was a victim of cybercrime (M14 15.4%, SD14 12.5%). According to previous studies examining the prevalence of cyber victimization, 8.6 to 15.0 percent of college students have been victims of cybercrime (M14 10.8%, SD14 2.4%) [1]. Moreover, Al-Badayneh et al. found that 44.5% of students said they had been bullied, and 9.6% said they had been the target of cyberbullying [1]. Twenty-nine percent of students were driving, and 5% were cyberbullying. Face-to-face (F2F) bullying was more prevalent in males, who were both victims and bullies. According to the findings, bullying differed significantly between males and females. Compared to women, men are more likely to be bullied [1]. Hawker and Boulton found that bullying victimization was strongly linked to increased depression and anxiety and lower global self-worth among those who reported having been bullied [5]. The six studies reporting composite victimization during college had a mean prevalence of 24.6% (SD 23.7%, range: 5.0-70.0%) [4]. Despite accumulating evidence on the prevalence of bullying victimization among students, few studies exist in Qatar.

2. Bullying as a source of strain

Agnew identifies the strains that should have the most significant impact on the outcome of criminal behaviour [6]. In contrast to other types of stress, such as parental rejection and negative school experiences, bullying (or 'peer abuse') has been neglected as a 'strain' [6]. The general strain theory (GST) has been widely used to explain how victimization experiences can lead to delinquent coping. Victimization experiences (e.g. physical/emotional punishment by significant others, criminal victimization, racial discrimination) represent negative stimuli that can create negative feelings and lead to delinquent behaviour or victimless crimes like drug abuse or being victimized by bullying [7].

As a life event, bullying victimization contributes to continuity and change in offending behaviour throughout a person's lifetime. Peer rejection, threats and physical assaults are all indicators of criminal behaviour for victims of bullying. These factors all contribute to victimization. We can expect negative emotions such as resentment, anxiety and depression to follow their introduction. These feelings could spur an individual to seek an end to bullying in some way [6, 7].

3. Theoretical model

This study is guided by a general strain theory (GST) that focuses on understanding the aetiology of delinquency [8]. GST posits that strain such as victimization affects negative emotions and depending on the resources available to individuals, deviant or criminal outcomes may occur. This study analyses the effects of strain variables (school delinquency, public disturbances, crimes, assaults, imprudent behaviour, violence, delinquency and negative emotions) on the likelihood of high school students being a victim of cyberbullying. It addresses whether cyberbullying victimization leads to strain and, therefore, delinquency. We specifically hypothesized that victimization of students' cyberbullying could lead to strains, which in turn leads to delinquency. With this focus, our study contributes to the literature addressing the aetiology of delinquency among high school students. Figure 1 summarizes the relationship between bullying victimization, strains and delinquency.

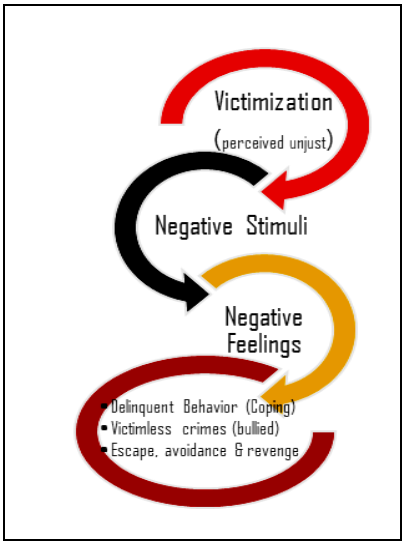

Figure 1. Bullying victimizations, strains and delinquency.

4. Methodology

4.1. Present study

This study addresses a critical topic in cyberspace in Qatar and examines a partial assumption of GST, which posits that cyberbullying victimization can create negative stimuli that in return lead to negative feelings and as an outcome delinquent behaviour. The delinquent behaviour can be seen as a coping method in encountering strains. Logistic regression analysis is applied (using SPSS v. 21) to test the hypothesis that victimization of students' cyberbullying could lead to strain and delinquency.

4.2. Procedure

The survey was distributed in public schools by trained researchers, teachers and social workers. The researchers explained the purpose of the study confidentiality and potential risks and provided directions for completing the survey. Parents and their children provided signed informed consent prior to participation, in accordance with the institutional review boards of Qatar University's Human Subject Research Committee and the Ministry of Social Development.

4.3. Measures

Dependent measure: the victimization of cyberbullying is measured at the dichotomy level by asking a general cyberbullying question. (In the last 12 months had you been bullied by other students using mobile messages, email, voice, or video messages?) Responses were: 1 - yes, 0 - no.

Independent measures: number of children in the family, family status, delinquency in the community, easy talking to father or mother when encountering problems. (How easily you can talk to your father on your issues? How easily you can talk to your mother on your issues?) Scale from 0 to 4 (0 = father died or did not try, 1 = very difficult, 2 = difficult and 3 = easy). Number of friends in difficulty with the law, time with friends, student health and satisfaction, family relations, delinquency in the family, family disputes, relatives believing in physical discipline, expose to violence and knowing about delinquency. Variables are based on self-reported delinquent behaviours. For each type of delinquency, a binary variable was created and coded 0 - yes and 1 if the respondent did not engage in the behaviours during the last year.

5. Findings

Findings indicate that the majority of participants live in intact families and about two-thirds of the sample reported family disputes.

Fourteen percent of participants reported a father absence during childhood.

Results showed half of the sample spent 4-7 hours with peers. The number of friends close to the students was more than three friends in about two-thirds of the sample. About two-thirds of the sample indicated that they had no friends who had difficulties with the law. We found also that one-third of the sample was not satisfied with school life. About a fifth of the sample was exposed to bullying inside the school. About a tenth of the sample was subjected to cyberbullying inside the school. The majority (82%) have witnessed fights on the school campus. And that less than a third were physically punished by the school administration.

More than half of the participants reported not using a seat belt, and about one-tenth of them committed reckless behaviour. Smoking cigarettes about ten percent, and drug and alcohol problems at less than ten percent of the participants. About a tenth to about a third of the sample reported criminal behaviours such as the use of force against others (violence), which accounted for about a quarter of the sample; lying, and theft which constituted about a tenth of the sample. About a third of the sample to less than a tenth of the sample reported abusive behaviour such as participating in physical fights which accounted for about a third of the sample, using force with teachers and others which accounted for about five percent, carrying a knife in about a tenth, assaulting a person, and disturbing security in public places. About a fifth of the sample reported less than a tenth of them to commit public disturbance behaviours to others. Organized delinquency appears significantly and reaches up to a quarter of the sample, polluting the environment in about a quarter of the sample. Moreover, more than a tenth of the sample committed delinquent behaviours in school such as cheating.

5.1. Logistic regression

The logistic analysis is used to examine how much variance is being accounted for in the nominal dependent variable (Being Bullied in School 0 = no, 1 = yes) by the independent variables (strain variables).

5.1.1. Block 0: beginning block (no model)

Table 1 shows that there were 25 bullying cases and 234 not bullying cases. The model's predictability was of 90.3%, considering no model that contains only the intercept (block 0). If we assume that not all students bullied (the null hypothesis: (HO), we reject the assumption that the number of students in each category is equal (234 vs. 25) (no = 0 yes = 1). This model serves as a benchmark for future comparisons between the model and independent variables (Table 2).

Table 1. Classification table [a, b].

	Observed		Predicted		
			Mobile bullying in school		Percentage correct
			no	yes	
Step 0	Mobile bullying in school	no	234	0	100
		yes	25	0	0
	Overall percentage				90.3

a) constant is included in the model, b) the cut value is 500. Note: Mobile bulling coded as 0 = not bullied, 1= bullied.

Table 2. Variables in the equation.

Wald test		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	constant	-2.236	0.210	112.972	1	0	0.107

5.1.2. Goodness of fit

To test if the model adequately describes the data.

5.1.3. Block 1: method = enter (the model)

Omnibus Tests of Model Coefficient are used to test the model fit. Table 3 shows that Chi-square values are significant, the model is significant compared to the null model, hence the model is showing a good fit.

Table 3. Omnibus Tests of Model Coefficients.

Block 1	Steps	Chi-square	df	Sig.
Step 1	Step	67.474	32	0
	Block	67.474	32	0
	Model	67.474	32	0

Table 4. Hosmer and Lemeshow Test.

Step	Chi-square	df	Sig.
1	4.519	8	0.808

Another good support to the model came from Hosmer and Lemeshow Test. It is also a test of model fit. Hence there is an Insignificant value ($p > 0.05$) of chi-square (4.519, sig. = 0.808), and the model adequately fits the data. Since it is not significance it is an indicator that the statistical model can be used safely. In a good model, the Hosmer and Lemeshow Test is not significant (Table 4). This means there is no difference between the observed and predicted models.

Table 5 shows that there is no difference between the observed and predicted model. Both values are approximately equal. The model adequately fits the data.

Table 5. Contingency table for Hosmer and Lemeshow Test.

Step 1	Mobile Bullying = no		Mobile Bullying = yes		Total
	Observed	Expected	Observed	Expected	
1	26	25.994	0	0.006	26
2	26	25.970	0	0.030	26
3	26	25.920	0	0.080	26
4	26	25.844	0	0.156	26
5	26	25.675	0	0.325	26
6	24	25.397	2	0.603	26
7	24	24.657	2	1.343	26
8	24	23.360	2	2.640	26
9	21	20.397	5	5.603	26
10	11	10.787	14	14.213	25

Table 6 shows a model summary of the Psuedo- R-Square. It can be used as an approximate variation in the dependent variable. Normally is used Nagelkerke R Square (R^2), which is equivalent to the Chi-square (R2). This is an adjusted version of the Cox & Snell R-square that adjust the scale of the statistic to cover the full range from 0-1

In this study, 49% change in the dependent variable (victim of cyber-Bullying) can be accounted to the independent variables in the model.

Table 6. Model summary.

Step	-2 Log likelihood	Cox & Snell R Square R^2	Nagelkerke R Square
1	96.929	0.229	0.488

Estimation terminated at iteration number 8 because parameter estimates changed by less than 0.001.

Table 7. Classification table.

Step 1	Observed		Predicted		
			Mobile Bullying		Percentage Correct
			no	yes	
	Mobile Bullying	no	231	3	98.7
		yes	13	12	48.0
	Overall percentage				93.8

The cut value is 0.500.

The classification - Table 7 provides how well the model is able to predict the correct category once the independent variables are added to the study. This can be achieved by comparing this with the classification Table 1 shown for Block 0 to measure the amount of change when the independent variables are included in the model. The model correctly classified 93.8% of cases overall (the percentage accuracy in classification: PAC). This is the rate of the correct classification if we predict that students would be victims of bullying. It

represents information on the degree to which the observed dependent variable is predicted by our model.

Table 8. Variables in the equation.

Variable	B	S.E.	Wald	df	Sig.	Exp(B)	95% CI Lower	Upper
Gender	2.202	0.824	7.149	1	0.008	9.046	1.800	45.455
Number of children	0.191	0.133	2.081	1	0.149	1.211	0.934	1.571
Family status	-1.29	0.938	1.910	1	0.167	0.274	0.044	1.719
Delinquency in the community	0.258	0.271	0.906	1	0.341	1.295	0.761	2.204
Easy to talk to your father	-0.359	0.281	1.633	1	0.201	0.698	0.403	1.211
Easy to talk to your mother	0.279	0.294	0.900	1	0.343	1.322	0.743	2.351
Number of friends violated the laws	-0.177	0.132	1.799	1	0.180	0.838	0.648	1.085
Time with friends	0.181	0.081	5.005	1	0.025	1.199	1.023	1.405
Student health	-1.03	0.583	3.111	1	0.078	0.358	0.114	1.121
School satisfaction	-0.463	0.362	1.634	1	0.201	0.629	0.310	1.280
Family relations	-0.665	.0473	1.976	1	0.160	0.514	0.203	1.300
Delinquency in the family	-0.653	0.511	1.632	1	0.201	0.521	0.191	1.417
Family disputes	0.733	0.389	3.551	1	0.060	2.081	0.971	4.461
Relatives believing in physical dripline	1.500	0.742	4.089	1	0.043	4.480	1.047	19.162
Expose to violence during childhood	1.967	0.928	4.490	1	0.034	7.150	1.159	44.106
Expose to violence in the last 12 months	-2.31	0.863	7.142	1	0.008	0.100	0.018	0.541
Heard about delinquency in the last 12 months	2.276	0.860	7.003	1	0.008	9.736	1.805	52.531
Father absence during your childhood	-0.525	0.831	0.399	1	0.528	0.592	0.116	3.014
Victim of physical abuse by teachers	-0.200	0.655	0.093	1	0.760	0.819	0.227	2.955
Smoking	-1.55	1.084	2.059	1	0.151	0.211	0.025	1.767
Alcohol use	5.764	2.252	6.553	1	0.010	318.483	3.860	26280.26
Not using the seat belt	0.716	0.694	1.064	1	0.302	2.046	0.525	7.980
Gambling	0.410	0.902	0.207	1	0.649	1.507	0.258	8.822
Force others to do something	1.133	0.823	1.894	1	0.169	3.104	0.619	15.572
Not tell the truth	-0.026	0.731	0.001	1	0.971	0.974	0.233	4.080
Steal less than 100QR	0.465	1.013	0.210	1	0.647	1.591	0.219	11.585
Steal more than 100QR	-1.59	1.280	1.550	1	0.213	0.203	0.017	2.498
Chewing tobacco	-2.32	1.188	3.816	1	0.051	0.098	0.010	1.008
Use stimuli	-2.81	0.773	13.272	1	0	0.060	0.013	0.272
Uses simple drugs	0.255	0.817	0.097	1	0.755	1.290	0.260	6.396
Drugs use	-0.955	1.143	0.698	1	0.403	0.385	0.041	3.615
Use force with students	-1.18	0.758	2.448	1	0.118	0.305	0.069	1.349
Constant	-2.47	2.182	1.283	1	0.257	0.084	1.800	45.455

Variable(s) entered on step 1: gender, Nchildl11, family, DLcommunity1, Easy to Talk to father, Easy to Talk to mother, number of friends violate law, Time with friends, Health25, SchoolSas27, Familyrelation28, DelinqFamily32, Familydisp30, Relatives believing in PhysDis33, ExpViolencechil34, Last12expViolence35, last12HearDeli36, FatherAbsenCil37, PhyViolenTeachers39, Smoking36, Alckohol37, NotSeatBelt38, Gambling39, ForceAoters40, NotTruth41, Steal less 100qr42, Steal More 100qr43, Sweaka44, Stimul45, Tayara46, Drugs47, ForceStu48.

Among those who were not bullied, 98.7% were not bullied as predicted by the model. This means the specificity of the model (true positive rate) is 98.7%. The model exhibits good sensitivity since among those who were bullied compared with not bullied, 48% were correctly predicted by the model to having been bullied. The sensitivity of the model is 48.8%. Overall, the accuracy rate was very good at 93.8%.

Table 8 presents the unique contribution of each independent variable (strain variables). It shows the relationship between the independent variables and the dependent variable. Exp(B) Odds is the Ratio of Probability (P(A)/P(B). B (Beta) is the predicted change for 1 unit change in the independent variable, there is Exp(B) change in the probability of the dependent variable. Odds Ratios (Exp(B): **1** means the probability of being not bullied is equal to the probability of being bullied. ≥ **1** means the probability of being bullied is greater than the probability of being bullied. ≤ **1** means the probability of being bullied is less than the probability of being bullied.) It can be said the probability (4.480) of students being bullied relative to believing in physical discipline is higher than being not bullied, and it was significant ($\alpha = 0.04$). The confidence interval (CI) it does not cross 1. Values greater than 1 mean as an independent variable (s) increases so the odd of students being bullied. Values less than 1 mean the opposite: as the independent variable increases, the odds of being bullied decreases (i.e. father absence during childhood, 0.592).

Table 9. Numbers, means and standard deviations for the independent variables.

Cyberbullying	Response	N	Mean	Std. Deviation
school delinquency	no	1429	3.0938	1.19506
	yes	131	2.0992	1.43503
public disturbance	no	1429	3.3261	1.03579
	yes	133	2.4060	1.41976
assault	no	1433	5.9512	1.71108
	yes	133	4.3008	2.39945
crime	no	1434	3.2392	1.05632
	yes	132	2.5758	1.28480
imprudent	no	1436	5.5529	1.46384
	yes	133	4.5038	1.97186
violence	no	1430	3.2105	1.15358
	yes	137	2.4088	1.44789
delinquency	no	1436	22.0487	5.34148
	yes	133	16.6541	7.62278
negative emotions	no	1232	11.1339	5.95808
	yes	113	12.0442	6.46196

5.1.4. Differences in cyberbullying

Table 9 shows that means are lower for students who reported victimization of cyberbullying compared to other students in all independent

variables. This means other non-victim students were more delinquent than the victim students.

Table 10 shows significant differences in testing the σ^2cyberbullying = σ^2non-cyberbullying assumption by Levene's test for equality of variances in all independent variables. This is a prerequisite to using t-test statistics for two independent samples. Finally, significant mean differences were found between the two groups in all independent variables at $\alpha = 000$.

Table 10. Levene's Test for Equality of Variances and independent samples t-test results for the difference between victimization of bullying (yes = 1, no = 0).

$\sigma^2 1 = \sigma^2 2$	Levene's Test for Equality of Variances		Test statistics				
Variables	**F**	**Sig.**	**t**	**df**	**Sig.**	**Mean differences**	**Sd error**
school delinquency	15.362	0	8.953	1558	0	0.99454	0.11109
			7.691	147.001	0	0.99454	0.12930
public disturbance	51.650	0	9.453	1560	0	0.92009	0.09733
			7.295	145.369	0	0.92009	0.12612
assault	54.759	0	10.232	1564	0	1.65040	0.16130
			7.752	144.725	0	1.65040	0.21291
crime	18.536	0	6.770	1564	0	0.66343	0.09799
			5.756	147.757	0	0.66343	0.11525
imprudent	25.202	0	7.649	1567	0	1.04917	0.13716
			5.985	145.784	0	1.04917	0.17529
violence	23.715	0	7.584	1565	0	0.80173	0.10572
			6.293	152.991	0	0.80173	0.12741
delinquency	44.957	0	10.686	1567	0	5.39461	0.50483
			7.982	144.252	0	5.39461	0.67584
negative emotions	1.307	0.253	-1.543	1343	0.123	-0.91032	0.58992
			-1.442	130.075	0.152	-0.91032	0.63115
negative strain emotions	2.664	0.103	-2.678	1244	0.007	-2.42369	0.90487
			-2.481	125.813	0.014	-2.42369	0.97676

6. Discussion - implications for prevention/intervention

Cyberbullying is an issue that affects a significant number of high school students who have access to various forms of technology. Cyberbullying is hard to escape for college students. It may be able to occur without drawing the attention of teachers and parents due to its cyber and anonymous nature. In addition, because many adolescents carry their cell phones at all times and use the Internet and social media frequently, they are vulnerable to cyberbullying even when physically separated from bullies. Once the information has been posted on the Internet, it may be difficult for the victim of cyberbullying to have it removed from all sites where it may have appeared. It can also reach a significantly larger audience than face-to-face bullying [9]. When cyberbullying happens by any means, it can feel as if you are being attacked everywhere, even inside your own home [10].

It is possible that younger students do not fully understand or realize that their behaviours and actions online can negatively affect others, even if they were meant as a joke. This is especially true when it comes to cyberbullying. It is essential that school-based and family-based efforts to improve students' understanding of cyber technology start as early as elementary. This is so that current cyberbullying behaviours and victimization experiences can be identified and addressed so that future instances of cyberbullying can be prevented and reduced.

Our findings suggest that younger students are an appropriate age group for efforts to prevent and intervene in instances of cyberbullying that centre on education. At this age, some students are already showing signs of involvement as both offenders and victims of crime. Even if they are meant as a joke, younger students need to understand that the messages they send or post online can somehow make the recipient feel uncomfortable or even harmed. Students frequently use 'just kidding' to minimize or excuse mean behaviours and teasing outside the classroom. It is a form of neutralization strategy. According to Sykes and Matza's description [11], the five methods of neutralization are as follows: the denial of responsibility, the denial of injury, the rejection of victims, the appeal to higher loyalties, and the condemnation of condemners [12]. Unfortunately, saying 'just kidding' rarely helps the victim cope with the distress resulting from online or offline bullying. It is essential to encourage children to consider another child's perspective, especially before posting online comments, and think about whether they would say or do the same thing if the target were present. Holfeld and Leadbeater argue that discussions in school classrooms and at home with parents can also assist children in 'thinking before posting' and avoiding sending potentially upsetting messages that cannot be retracted [13]. Traditional victimization has been identified as a risk factor concerning cyberbullying victimization.

7. Conclusions

Cyberbullying can be viewed as an emerging social, criminological and educational problem. It involves using cyberspace, especially the Internet or cell phones repeatedly, and over time exposed to negative actions by others. Cyberbullying included but is not limited to abusive messages (text, voice, or video), e-mail, or insulting pictures on online message boards, and Web sites that disseminate degraded content on cyberspace.

Logistic regression was performed to analyse the effects of strain variables on the likelihood of high school students being a victim of cyberbullying. Our findings supported our hypothesis that victimization of students' cyberbullying can lead to strains and which in turn leads to delinquency. Among those who were not bullied were corrected as predicted by the model. The specificity (true positive rate) of the model is (98.7%). The model exhibits good sensitivity. Since among those who were bullied over those

not bullied 48% were correctly predicted to be bullied by the model. The sensitivity of the model was 48.8%. The findings of this study can be added to the generalizability of GST outside the USA in the new setting of a developing country.

Our findings showed that strain variables explain 49% change in cyberbullying victimization. The model correctly classified 93.3% overall prediction of the cases, known as the accuracy percentage in classification. Significant gender differences were also found in cyberbullying. As expected, men deviate more than women do. Al-Badayneh et al. argued that women face more social challenges than men, and as a result, women are forced to deal with the strains of their lives using more socially acceptable coping strategies [1]. Hence, women have different exposure, responses, and coping mechanisms to the emotional and mental stress caused by cyberbullying than men [1]. For instance, Holfeld and Leadbeater consider that higher rates of cyber victimization are sometimes higher among women than to men [13]. The consequences of being a victim of cyberbullying can be a wide range in frequency and intensity. In addition, the fear of being ridiculed or harassed by others can discourage people from speaking up or attempting to resolve the issue. In extreme cases, cyberbullying can cause individuals to commit suicide. Moreover, cyberbullying can have multiple effects on children [3].

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