Factors Affecting Cyberbullying, Cyberbullying Victimization, and Cyberbullying Perpetration Among College Students

Professor Dr. Dhiab Al-Badayneh

Professor of Methodology, Criminology and Forensic Psychology

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ABSTRACT

The study investigates factors affecting cyberbullying, cyberbullying victimization, and cyberbullying perpetration among college students in Jordan. A survey of 1000 randomly selected Jordanian students from 12 governorates revealed that 26% had experienced cyberbullying, 73% were aware of cyberbullying victimization, 80% were aware of cyberbullying perpetration, and 9% were aware of victims both on and off campus.

Results show that gender, college, father's work, exposure to violence, no interest in life, suicidal thoughts, anger, and low self-control significantly affect cyberbullying, victimization, and perpetration. Gender, as a factor, also has significant differences in cyberbullying, victimization, perpetration, self-cyberbullying, vicarious cyberbullying, and low self-control. Preventive measures are discussed in higher education.

Keywords: Exposure to cyberbullying, cyberbullying, cyberbullying victimization, cyberbullying perpetration, college students Jordan.

المُلخَّص

العوامل المؤثرة على التنمر السيبراني، وضحايا التنمر السيبراني، وارتكاب التنمر السيبراني بين طلاب الجامعات

الأستاذ الدكتور /ذياب البداينة
أستاذ علم المنهجية وعلم الجريمة وعلم النفس الجنائي - عضو هيئة التدريس بكلية الدراسات العليا - أكاديمية الشرطة - دولة قطر

تبحث هذه الدراسة في العوامل المؤثرة في التنمر السيبراني بشكل عام، والوقوع ضحية للتنمر السيبراني، وارتكاب التنمر السيبراني بين طلاب الجامعات في الأردن. شمل المسح الاجتماعي عينة مكونة من 1000 طالب أردني تم اختيارهم عشوائيًا من 12 محافظة. تبين أن 26 % من العينة تعرضوا للتنمر السيبراني، وأن 73 % كانوا على دراية بالوقوع ضحية للتنمر السيبراني، وأن 80 % كانوا على دراية بارتكاب التنمر السيبراني، وأن 9 % كانوا على دراية بالضحايا داخل الحرم الجامعي وخارجه.

تظهر النتائج أن النوع الاجتماعي، والكلية، وعمل الأب، والتعرض للعنف، وعدم الاهتمام بالحياة، وأفكار الانتحار، والغضب، وانخفاض ضبط الذات تؤثر بشكل كبير على التنمر السيبراني بشكل عام، والوقوع ضحية للتنمر السيبراني، وارتكاب التنمر السيبراني. كما تبين الدراسة وجود فروق ذات دلالة إحصائية تعزى للنوع الاجتماعي في التنمر السيبراني، والوقوع ضحية للتنمر السيبراني، والتنمر السيبراني الذاتي، والتنمر السيبراني غير المباشر، وانخفاض ضبط النفس. تمت مناقشة التدابير الوقائية في التعليم العالي.

الكلمات المفتاحية: التعرض للتنمر السيبراني، التنمر السيبراني، ضحايا التنمر السيبراني، ارتكاب التنمر السيبراني، طلاب الجامعات، الأردن.

1. Background

The widespread use of technology among young people has led to cyberbullying, causing harmful discourse and a surge in cyberbullicide ideation (Schonfeld et al., 2023). College students are both perpetrators and victims, with severe mental health consequences (Maurya et al., 2022; Kumar et al. (2021). The internet has revolutionized education, making it more accessible. However, it has also led to a rise in cyberbullying, a phenomenon linked to high-profile adolescent suicides, highlighting the need for a comprehensive understanding of this issue (Mitsu, & Dawood, 2022).

Bullying is aggressive behavior that repeatedly causes injury or discomfort, often through physical contact or words. Cyberbullying, on the other hand, involves using technology to harass, hurt, embarrass, humiliate, or intimidate another person, often through text, apps, or online platforms. Cyberbullying can sometimes escalate into unlawful or criminal behavior (Hinduja, & Patchin, 2019).

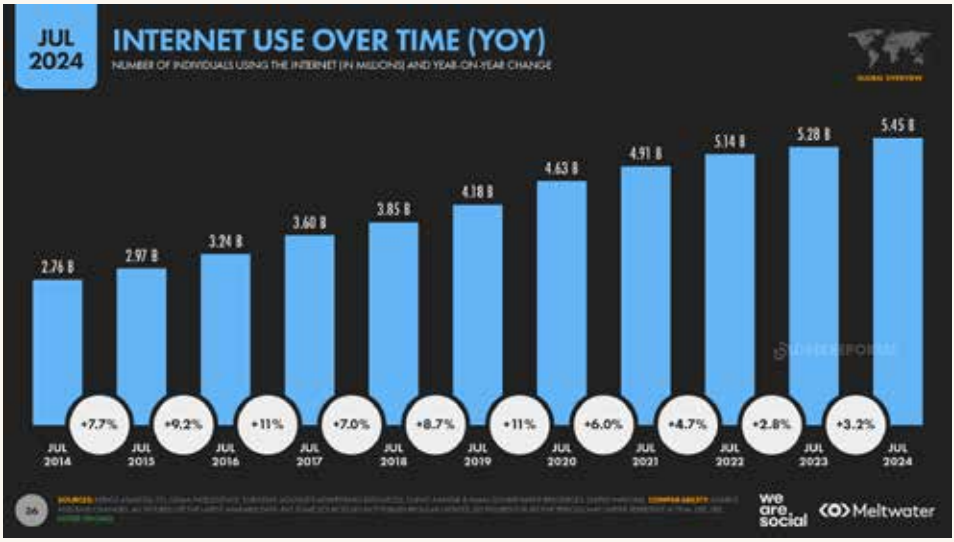


Figure 1 Internet uses 2014-2024

As of July 2024, 5.45 billion people worldwide have become internet users, making them a "supermajority". The connected population grew by 167 million users in 12 months up to July 2024, a 3.2% year-on-year growth rate. However, delays in research of internet adoption may suggest a higher real growth rate. Global internet access has reduced the number of unconnected people to 2.67 billion, primarily in

Southern and Eastern Asia and Africa. However, more work is needed to achieve universal access. Despite mobile phones being the primary mode of internet use, over 6 in 10 users still use laptops and desktops for online activities (Kepios, 2024). In early 2023, Jordan had 9.95 million internet users, with internet penetration at 88.0%. The country had 6.61 million social media users, accounting for 58.4% of the total population. There were 8.61 million cellular mobile connections, equivalent to 76.1% of the population. Internet usage increased by 6.8% between 2022 and 2023. However, 1.36 million people in Jordan did not use the internet, indicating that 12.0% of the population remained offline. The median mobile internet connection speed in Jordan decreased by 2.76 Mbps (-14.3 percent) in the twelve months to the start of 2023, while fixed internet connection speeds increased by 21.10 Mbps (+39.5%). The latest published figures for internet use may under-represent reality, and actual adoption and growth may be higher than the figures suggest (Simon Kemp, 2023). Internet freedom in Jordan is limited, with government surveillance and restrictions on online activity. WhatsApp gets suspended during high school exams in an attempt to prevent cheating and TikTok is blocked, and journalists can face prosecution for criticism. The government also issues gag orders to limit media coverage of politically sensitive topics. In August 2023, the king approved a new Cybercrime Law, imposing criminal penalties for online speech and circumvention tools. The monarchy's electoral system disadvantages opposition, and the judicial system lacks independence and due process (Freedom on the Net, 2023). A report by the Market Research Unit of the Information and Communications Technology Association of Jordan (Intaj) shows that 91% of Jordanians are connected to the internet. 77% prefer mobile devices for internet access, while only 22% use laptops. Google Chrome is the preferred browser, with Android users accounting for 79%. Social media accounts account for 56% of the Jordanian population. LinkedIn is the most popular platform among women, with 33% using it. Snapchat is also popular, with 54% using it. Instagram is also popular, with 50% of female users using it (The Jordan Times, 2024).

Bullying, including cyberbullying, involves power imbalances and harmful messages sent via digital technologies. It poses significant health risks to teenagers worldwide, often linked to off class bullying. Cyberbullying provides anonymity, increasing danger to minors. If linked to suicide, legal proceedings may be initiated (Schonfeld et al., 2023, Daniela & Felicia, 2022). Victims may experience depression, anxiety, social frustration, and emotional pressure (Kamath et al., 2021).

Cyberbullying, a hidden, repetitive issue, can significantly impact secondary school students' physical and mental health due to its indirect nature, exacerbated

by the influence of family and online environments, which can trigger aggressive behaviors. Cyberbullying, primarily verbal and relational cyberbullying, has become more prevalent among adolescents, causing severe and long-lasting psychological trauma. This study aimes to understand the influencing factors of cyberbullying behavior to prevent and reduce such deviant behaviors and enhance students' psychological health. The study is unique regarding geographic heterogeneity, scientific selection, and the use of integrated combinations of variables. Violence exposure, which includes witnessing and experiencing domestic violence firsthand, is a significant factor in adolescent aggressive behavior. Adolescents who witness or experience domestic violence tend to view violence as an acceptable approach to resolving interpersonal conflicts and internalize it as a stable personality trait, increasing the likelihood of engaging in cyberbullying behaviors in the future. Exposure to domestic violence has a significant impact on adolescents' emotional and behavioral problems, with inter-parental violence being more important than other forms of destructive conflict. According to a study by Chen et al. (2023), exposure to domestic violence has a positive impact on cyberbullying among secondary school students, with depression partially mediating the relationship and self-control alleviating the effects while intensifying depression's effect (Chen et al., 2023).

Cyberbullying is a widespread issue among children and adolescents, causing emotional, social, and psychiatric problems that can persist into adulthood. Research on cyberbullying is limited, but it provides insight into the psychosocial and academic consequences of cyberbullying. Students who are cyberbullied report feelings of sadness, anxiety, and fear, which affect their grades. They are also more likely to skip school, have detentions or suspensions, or bring a weapon to school. Research shows that depression, substance use, and delinquency are significantly higher among youth who report experiencing cyberbullying or online sexual solicitation. Furthermore, perpetrators of cyberbullying are more likely to break the rules and act aggressively. We need a survey with a diverse sample of middle school and college students to understand its prevalence and impact better, as the literature on cyberbullying is limited (Mishna et al., 2010).

Defining Cyberbullying

Cyberbullying is the use of electronic communication technologies to bully others, but defining its prevalence remains challenging due to a lack of consensus on specific parameters. Standard operational definitions vary in specificity versus generality, with some defining it as cyberbullying via the internet or mobile phones,

while others are more specific regarding technology taxonomy. Cyberbullying can take various forms and occur through various venues, including flaming, harassment, outings and trickery, exclusion, impersonation, cyberstalking, and sexting (Kowalski et al., 2009). According to Werner et al. (2010), using the internet to threaten or embarrass someone, such as posting or sending messages about them for others to see, or instructing others to block instant messages from someone you dislike or are angry with, using the internet to play a joke or annoy someone you're angry at, or making rude or nasty comments about someone else online (Werner et al. 2010, p. 330) are examples of such behavior. Willard (2005) categorizes cyberbullying into seven forms: flaming, harassment, denigration, impersonation, outing and trickery, exclusion, and cyberstalking, involving harmful or cruel texts or images (Willard, 2005). Various factors influence cyberbullying behavior in adolescents, including personality traits, traditional cyberbullying, perception of the victim, strain, and parental interaction. Other internal factors, such as self-control, also play a role. Factors influencing cyberbullying include individuals, families, friends, schools, and social media use (Kowalski et al., 2009).

Cyberbullying in university colleges leads to negative consequences for both victims and perpetrators. Victims may experience physical, psychological, and academic problems, while bullies are more likely to commit criminal behaviors as young adults. Recent research suggests that low self-control theory, which suggests youths with low self-control, empathy, and impulsivity are more likely to engage in cyberbullying, may explain the etiology of school cyberbullying. We need more research to better understand this issue (Moon & Alarid, 2015).

Cyberbullying, which occurs through electronic media and is widespread, affects cybervictims. The average annual cybervictimization rate is 14–21%, with 10–72% of youths globally reporting being victims. Cybervictims often experience mental health problems, stress, and maladaptive regulation strategies that lead to suicide. Cybervictimization is a strong predictor of cyberbullying, with some cybervictims responding with cyberbullying behavior. Cyberbullying victims frequently commit it in the same online environment where they experienced it. Previous cybervictimization experiences positively predict subsequent cyberbullying behavior, and some argue that cybervictims would perpetrate cyberbullying. The vicious cycle of cybervictimization and cyberbullying is a significant concern (Luo, Wu N., Huang, 2023).

A group or individual using electronic contact can carry out an aggressive, intentional act known as cyberbullying, which has become a familiar and widely

studied attack. It manifests itself as visual and written-verbal behaviors, with visual behaviors being more severe. Cyberbullying is most prevalent among early teens but can begin in middle school and continue into college.

Relevant literature Review

Victims often vent their emotions through cyberbullying and become perpetrators themselves, contributing to a vicious cycle. Cyberbullying is characterized by anonymity, spatial spread, and robust propagation, affecting victims' physical and psychological health (Dou, Xiang, Sun, & Chen, 2020).

For a perpetrator, the path to a cyberbullying encounter starts with personal and situational factors that affect the individual's internal state. This can lead to hostile thoughts, negative effect, and heightened arousal. Depending on the situation, the victim's response can be impulsive or more thoughtful. Over time, these encounters can lead to distal outcomes, such as decreased popularity or school performance, affecting individual and situational factors. For example, a young boy may become a cybervictim after receiving a message, putting him in a state of distress. The victim's response can feed back into previous maladaptive behavior and provocation, potentially affecting future encounters (Kowalski et al., 2009).

Early life experiences shape low self-control, as Gottfredson and Hirschi (1990) identified. It includes six dimensions: impulsivity, insensitivity, preference for physical activity, risk-taking tendency, shortsightedness, and nonverbal orientation. Individuals with low self-control tend to prefer immediate gratification, have lower verbal abilities, and struggle with concentration. There is a belief that criminal behavior and imprudent behaviors such as drinking, smoking, and gambling are associated with low self-control (Gottfredson & Hirschi, 1990; Grasmick, Tittle, Bursik, & Arneklev, 1993; Hay, & Forrest, 2008). The general strain theory (GST) suggests that cyberbullying victimization, as a negative stimulus, can lead to cyberbullying perpetration. Studies have found a significant correlation between victimization and cyberbullying perpetration, suggesting that victims are likely to become perpetrators. Anger, a coping strategy, can also middle in this relationship. Stress and strain can trigger negative emotions like anger, which in turn increases the likelihood of engaging in cyberbullying. According to various studies (Kraft & Wang, 2011; Patchin & Hinduja, 2011; Mcgrath, 2017), being bullied online can increase the likelihood of engaging in cyberbullying.

Over 1 million children in Amman, Jordan, participated in the national campaign "The New Epidemic at The Time of The Pandemic" by the National Council for Family Affairs and UNICEF Jordan to combat cyberbullying. The campaign, launched in 2017 as part of the National Plan for ending violence against children, aimed to raise public awareness about cyberbullying and internet safety. The campaign engaged 60 online activists and influencers on social media platforms, promoting knowledge on safe internet usage and digital protection policies. The campaign attracted 57% of young followers, mainly from Amman. The campaign aimed to stimulate positive interaction with young people and raise awareness at the national, institutional, academic, and grass-roots level, requiring necessary interventions, policies, legal support, and psychosocial support to deal with victims of cyberbullying. (National Council for Family Affairs, 2021).

A study by Al-badayneh et al. (2024b) investigates the link between cyberbullying and depression among college students. It involved 1,000 Jordanian students from Tafila Technical University, representing 12 governorates. Results showed that 26% of students experienced violence and 9% knew cyberbullying victims. 37% reported depression, 33% had a death wish, and 45% had no interest in life. Cyberbullying significantly correlated with depression and low self-control, with factors such as fear, anger, gender, college type, and father's work status explaining 86% of the depression variable (Al-Badayneh, Khelifa, & Aladra, 2024). Another study examines strain variables affecting cyberbullying victimization among college students in Qatar. Results show a 49% change in victimization, with significant gender and mean differences between bullied and non-bullied students. The findings support the General Strain Theory's hypothesis that cyberbullying victimization can lead to delinquency (Al-badayneh, Al-Hafry, & Ben Brik, 2022).

A study found that 30.1% of Jordanian nursing students were not involved in cyberbullying, while 8.6% were perpetrators and 20.4% victims. Visual/sexual and verbal/written victimization were prevalent. Age and male gender were associated with decreased cyberbullying. The study revealed alarming cyberbullying prevalence among nursing students, with age as a factor negatively affecting CBP and CBV, and being male increasing CBP. Future research should use longitudinal design and develop specific policies (Al-Shatnawi, Ababneh, Elemary, Rayan & Baqeas, 2024).Al-Badayneh et al. (2024A) investigated the impact of cyberbullying on youth cyberbullicide ideation (i.e., cyberbullying victimization, cyberbullying perpetrator, and low self-control). Findings revealed that students experienced cyberbullying. Approximately 26% of the sample experienced cyberbullying in general, 73% knew cyberbullying victims, and 64% knew cyberbullying perpetrators. Nearly a

10th of the sample (9.3%) knew about cyberbullying, 9% were aware of victims on the university campus, 35.8% reported its existence off-campus, and 13.5% reported knowing cyberbullying perpetrators. About a third of the sample (30%) reported experiencing cyberbullicide ideation (12.9% males and 17.1% females), with a high level of cyberbullicide ideation found among victims of violence (16%) and cyberbullying (8.7%). Almost half of the sample (45.3%) reported depression or hopelessness, no interest in life or life enjoyment (45.3%), willingness to die (32.8%), or cyberbullicide ideation (30%). A fifth of participating students reported bullying victimization, and a 10th reported cyberbullying. Results showed that cyberbullying variables could explain a 100% change in cyberbullicide ideation. The logistic regression model correctly classified 70.9% of the cases' overall predictions. Furthermore, students of Arts colleges (18%) experienced cyberbullicide ideation more than students of Sciences colleges (12%). The study supported the hypothesis that students' cyberbullying victimization could lead to cyberbullicide and in the least serious scenario to cyberbullicide ideation (Al-Badayneh, Khelifa & Ben Brik, 2024).

A study examines workplace cyberbullying among academic staff at Jordanian universities, revealing that it reduces with increasing social capital. However, no relationship was found between cyberbullying and self-esteem. A positive correlation was found between self-esteem and structural social capital. The findings suggest that Jordanian administrators and policymakers should improve social capital among academics to prevent distress and improve organizational life (Alrawashdeh, Alsawalqa, Alnajdawi, et al., 2024).

Al-badayneh et al., (2023), investigates the social determinants and strains of cyberbullying victimization among expatriate populations in high-income countries like Qatar. The investigation suggests that factors like alienation, loneliness, homesickness, insecurity, and helplessness contribute to victimization. The study found that 10.8% of expats reported cyberbullying, with 24% being males and 5.8% females. Victims were mostly from intact families, with a third reporting the absence of a father during childhood. Most victims did not use seat belts and avoided gambling (Al-badayneh, ben Brik, & Elwakad, 2023).

2. Methodology

2.1 Sample.

The study sample comprised 1000 Jordanian students representing 12 Jordanian governorates. The sample was selected randomly from different colleges and levels. Of these students, 454 (45.4%) were males, and 546 (54.6%)

were females. The sample comprised 496 students (49.6%) from science colleges and 504 students (50.4%) from other colleges. Around a quarter of the sample (26%) were exposed to cyberbullying, 9% knew victims of cyberbullying on the university campus, and 36% knew victims outside the campus. Around a quarter (26%) of the sample participated in violence.

2.2 Measurement

The **victimization of cyberbullying** is measured at different levels:

1. **General cyberbullying scale**. This scale is based on the literature review. It consists of 34 items covering cyberbullying victimization, self-reported victimization, and perpetration. Questions are on interval levels 0-5 (0 no to 5 most frequently). The scale's Cronbach's α was 0.99, and the validity (correlation between the scale and LSC scale) was 0.29 α=0.00.

2. **Cyberbullying subscales**

   A. **Exposure to Cyberbullying.** One single-item scale. In the last 12 months, were you exposed to cyberbullying? Responses were (1—yes, 0—no).
   B. **Knowledge of cyberbullying victims**: one single-item scale. In the last 12 months, did you know victims of cyberbullying? Responses were (1—yes, 0—no).
   C. **Knowledge of cyberbullying perpetrators**. This was a one-item scale. In the last 12 months, did you know the perpetrators of cyberbullying? Responses were (1—yes, 0—no).
   D. **Cyberbullying victimization Scale.** This scale is based on the Revised Olweus Bully/Victim Questionnaire. It consists of 10 items for victims on interval levels 0-5 (0 no to 5 most frequently). The scale's Cronbach's α was 0.95, and the validity (correlation between the scale and Low Self Control (LSC) scale) was 0.26 α=0.00.
   E. **Cyberbullying perpetration scale**. This scale is based on the Revised Olweus Bully/Victim Questionnaire. It consists of 10 items for perpetrators on interval levels 0-5 (0 no to 5 most frequently). The scale's Cronbach's α was 0.97, and the validity (correlation between the scale and LSC scale) was 0.29 α=0.00.
   F. **Self-report cyberbullying scale.** It consists of 5 items: cyberbullying using text, emails, pictures, videos, and blackmailing. The scale's Cronbach's α was 0.97, and the validity (correlation between the scale and LSC scale) was 0.28 α=0.00.
   G. **Vicarious cyberbullying scale.** It consists of 5 items: cyberbullying using text, emails, pictures, videos, and blackmailing. The scale's Cronbach's α was 0.96, and the validity (correlation between the scale and LSC scale) was 0.28 α=0.00.

Violence Measures

I. **Exposure to family violence.** The dichotomy level by asking a general family violence question: In the last 12 months, have you been exposed to family violence? Responses were (1—yes, 0—no).
II. **Exposure to any violence.** The dichotomy level by asking a general violence question: In the last 12 months, have you been exposed to family violence? Responses were (1—yes, 0—no).
III. **Participation in Violence.** The dichotomy level by asking a general family violence question: In the last 12 months, have you been participating in any violence? Responses were (1—yes, 0—no).

Procedure

Trained researchers distributed the survey to all participants. They explained the study's purpose, confidentiality, and instructions for completing the survey. The researchers obtained informed consent from all students and requested their voluntary participation, allowing them to withdraw from the study whenever they wished.

3. Findings

The results show that 26% of the sample participated in fights and experienced cyberbullying. Less than 10% of the sample (9.3%) reported knowledge about cyberbullying, and 35.8% reported it outside the university campus. Moreover, more than 10 percent of the sample (13.5%) reported knowledge about cyberbullying perpetrators, and 33% reported it outside the university campus. About half of the sample (45.3%) reported depression or hopelessness, lost interest in life or life enjoyment (45.3%), a willingness to die (32.8%), or suicide (30%).

The Relationship Between Exposure to Violence, Cyberbullying, and Low Self-Control

Table 1 shows a significant relationship between low self-control, all violence variables, and cyberbullying variables, except exposure to violence.

Table 1: Correlation coefficients between exposure to family violence, violence victimization, participation in violence, low self-control, and cyberbullying among college students

	1	2	3	4	5	6	7	8	9
1. Low Self-Control	**1**								
2. Exposure to Violence	.013	**1**							
3. Violence Victims	.149**	.008	**1**						
4. Participation in Violence	.170**	.023	.17**	**1**					
5. Exposure to Cyberbullying	.132**	.032	.10**	.173**	**1**				
6. Knowledge Cyberbullying Victims*	-.13**	-.013	-.16**	-.21**	-.20**	**1**			
7. Knowledge Cyberbullying Perpetrator*	-.14**	-.03	-.17**	-.18**	-.22**	.489**	**1**		
8. Self-report Cyberbullying	.276**	-.08*	.018	.052	.069*	.094**	.059	**1**	
9. Vicarious Cyberbullying	.279**	-.08*	.011	.053	.076*	.087*	.052	.950**	**1**
10. General Cyberbullying	.289**	-.09*	.033	.050	.062	.080*	.056	.962**	.949**

**Correlation is significant at the 0.01 level (2-tailed).* coding know 1= yes do not know =0

*Correlation is significant at the 0.05 level (2-tailed).

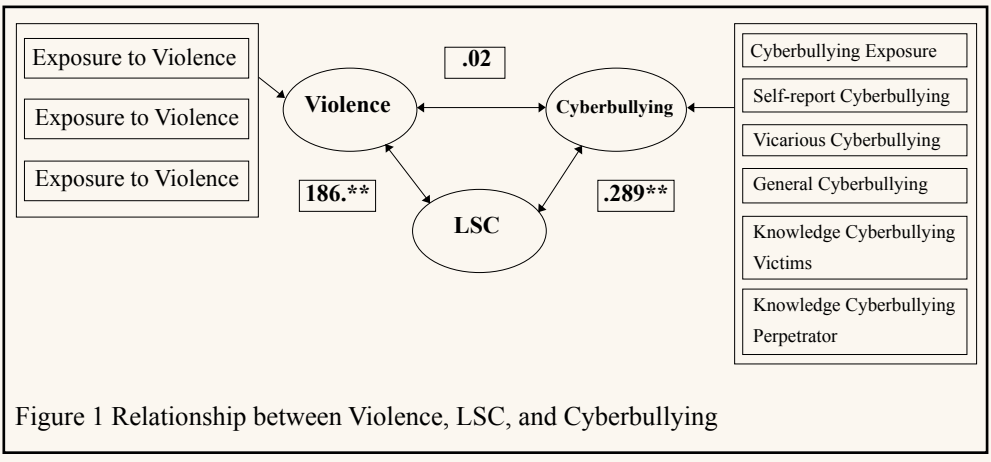


Figure 1 Relationship between Violence, LSC, and Cyberbullying

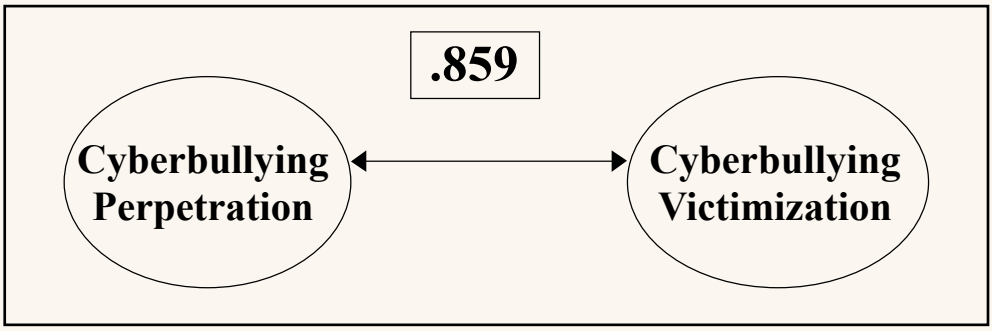
Table: The relationship between Cyberbullying victimization, Cyberbullying perpetration, self-reported Cyberbullying, and vicarious cyberbullying

	Cyberbullying victimization	Cyberbullying perpetration	Self Report cyberbullying	Vicarious cyberbullying
Cyberbullying victimization	**1**	.859	.807	.810
Cyberbullying Perpetration	.859	**1**	.943	.911
Self report-Cyberbullying	.807	.943	**1**	.950
Vicarious cyberbullying	.810	.911	.950	**1**

**. Correlation is significant at the 0.01 level (2-tailed).

The Relationship Between Cyberbullying Victimization and College Students' Cyberbullying Perpetration

The study found that cyberbullying victimization positively predicts cyberbullying perpetration in college students. This is consistent with previous research, as negative emotions, such as anger, can trigger cyberbullying. The anonymity of the network environment increases the likelihood of victims venting their negative feelings, leading to increased cyberbullying perpetration (Dou, Xiang, Sun, & Chen, 2020; Özdemir, Kuzucu, 2015; Linton, & Power, 2012; Law, Shapka, Hymel, & Olson, 2011).



Factors Affecting General Cyberbullying

As can be seen from Table 1, regressing low self-control, anger, father's work, suicide ideation, gender, exposure to violence in childhood, type of college, and showing no interest in life on general cyberbullying showed a significant effect of all these variables (F = 21.787, α =.000). However, in general, all predictors explained 15% of the variance on cyberbullying.

Table 1. Regression ANOVA table of all predictors on the General cyberbullying.

Source	Sum of squares	df	Mean square	F	Sig.
Regression	174249.850	8	21781.231	21.787	.000
Residual	990732.054	991	999.730		
Total	1164981.904	999			

Table 2. Unstandardized Coefficients and Standardized Coefficients on cyberbullying generally.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	23.072	5.736		4.023	.000
Low self-control	1.360	.151	.275	8.979	.000
Gender	-4.031	2.105	-.059	-1.915	.056
College	4.875	2.116	.071	2.304	.021
Father Work	-6.272	2.241	-.083	-2.799	.005
Exposure to violence	-9.165	3.365	-.080	-2.724	.007
No Interest in Life	-10.690	2.138	-.156	-5.000	.000
Suicide	8.480	2.311	.114	3.669	.000
Anger	3.286	.757	.132	4.342	.000

Table 2 shows that each predictor—low self-control, anger, father's work, suicide ideation, gender, exposure to childhood violence, type of college, and showing no interest in life—contributes significantly and uniquely to cyberbullying.

Factors affecting cyberbullying victimization

As can be seen from Table 1, regressing low self-control, anger, father's work, suicide ideation, gender, exposure to violence in childhood, type of college, and showing no interest in life on cyberbullying victimization showed a significant effect of all these variables ($F = 15.760$, $\alpha = .000$). However, all predictors explained 16% of the variance in cyberbullying victimization.

Table 3. Regression ANOVA table of all predictors on cyberbullying victimization.

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	9814.522	8	1226.815	15.760	.000
Residual	77144.614	991	77.845		
Total	86959.136	999			

Table 4. Unstandardized Coefficients and Standardized Coefficients on the cyberbullying victimization

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	7.632	1.601		4.768	.000
LSC Scale	.331	.042	.245	7.831	.000
Gender	-.997	.587	-.053	-1.697	.090
College	.762	.591	.041	1.291	.197
Father Work	-1.387	.625	-.067	-2.218	.027
Child violence	-2.687	.939	-.086	-2.862	.004
No Interest in Life	-1.939	.597	-.103	-3.250	.001
Suicide	2.419	.645	.119	3.750	.000
Anger	.736	.211	.108	3.485	.001

As can be seen from Table 4, each predictor (low self-control, anger, father's work, suicide ideation, exposure to violence in childhood, type of college, showing no interest in life) has a significant unique contribution (exceptgender) on cyberbullying victimization.

Factors affecting cyberbullying perpetration

As can be seen from Table 5, regressing low self-control, anger, father's work, suicide ideation, gender, exposure to violence in childhood, type of college, and showing no interest in life on cyberbullying victimization showed a significant effect of all these variables (F = 15.760, α =.000). However, all predictors explained 16% of the variance on cyberbullying perpetration.

Table 5. Regression ANOVA table of all predictors on the cyberbullying perpetrator.

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	17288.098	8	2161.012	21.763	.000
Residual	98403.621	991	99.297		
Total	115691.719	999			

Table 6. Unstandardized Coefficients and Standardized Coefficients on Cyberbullying Perpetrator.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	6.731	1.808		3.724	.000
LSC Scale	.434	.048	.279	9.093	.000
Gender	-1.188	.663	-.055	-1.791	.074
College	1.425	.667	.066	2.137	.033
Father Work	-1.672	.706	-.070	-2.367	.018
Child violence	-2.549	1.060	-.071	-2.404	.016
No Interest in Life	-3.907	.674	-.181	-5.798	.000
Suicide	2.415	.728	.103	3.316	.001
Anger	.998	.239	.127	4.186	.000

As can be seen from Table 6, each predictor (low self-control, anger, father's work, suicide ideation, gender exposure to violence in childhood, type of college, showing no interest in life) has a significant unique contribution to cyberbullying victimization.

Gender Differences

Table 7 shows a significant difference between males and females in all cyberbullying variables (general cyberbullying, cyberbullying victimization, cyberbullying perpetrator, self-cyberbullying, vicarious cyberbullying, and low self-control). Figures 1 and 2 show gender differences in cyberbullying victimization and cyberbullying perpetration.

Table 7. Gender differences in cyberbullying variables and low self-control

	Source of Variance	Sum of Squares	df	Mean Square	F	Sig.
General Cyberbullying	Between groups	5570.172	1	5570.172	4.795	.029
	Within groups	1159411.732	998	1161.735		
	Total	1164981.904	999			
Cyberbullying Victimization	Between groups	398.176	1	398.176	4.591	.032
	Within groups	86560.960	998	86.734		
	Total	86959.136	999			
Cyberbullying Perpetration	Between groups	533.586	1	533.586	4.624	.032
	Within groups	115158.133	998	115.389		
	Total	115691.719	999			
Self-Cyberbullying	Between groups	268.412	1	268.412	4.305	.038
	Within groups	62217.492	998	62.342		
	Total	62485.904	999			
Vicarious Cyberbullying	Between groups	124.023	1	124.023	3.822	.051
	Within groups	32385.768	998	32.451		
	Total	32509.791	999			
Low Self-Control	Between groups	371.599	1	371.599	7.823	.005
	Within groups	47402.832	998	47.498		
	Total	47774.431	999			

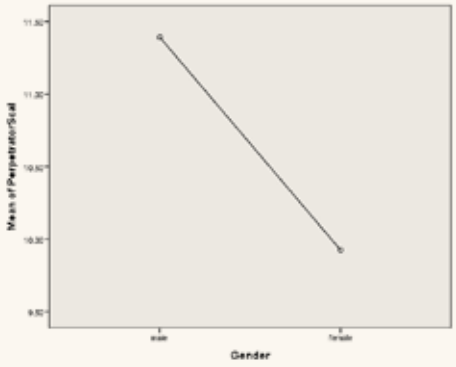


Figure 1 Gender mean differences in Cyberbullying Perpetration

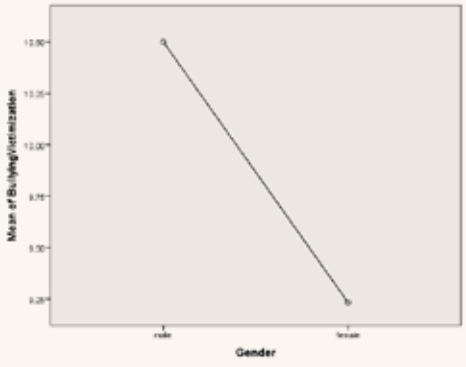


Figure 2 Gender mean differences in Cyberbullying Victimization

College Differences

Table 8 shows significant differences between science colleges and other colleges in some cyberbullying variables (general cyberbullying, vicarious cyberbullying, and low self-control). However, no significant differences were found between science colleges and other colleges in cyberbullying victimization, cyberbullying perpetrators, self-cyberbullying, and vicarious cyberbullying.

Table 8. College Differences in Cyberbullying variables and low self-control

	Source of Variance	Sum of Squares	df	Mean Square	F	Sig.
General Cyberbullying	Between groups	5570.172	1	5570.172	4.795	.029
	Within groups	1159411.732	998	1161.735		
	Total	1164981.904	999			
Cyberbullying Victimization	Between groups	2678.343	1	2678.343	2.300	.130
	Within groups	1162303.561	998	1164.633		
	Total	1164981.904	999			

Cyberbullying Perpetration	Between groups	32.235	1	32.235	.370	.543
	Within groups	86926.901	998	87.101		
	Total	86959.136	999			
Self Cyberbullying	Between groups	226.850	1	226.850	1.961	.162
	Within groups	115464.869	998	115.696		
	Total	115691.719	999			
Vicarious Cyberbullying	Between groups	214.835	1	214.835	3.443	.064
	Within groups	62271.069	998	62.396		
	Total	62485.904	999			
Low Self-Control	Between groups	167.599	1	167.599	5.172	.023
	Within groups	32342.192	998	32.407		
	Total	32509.791	999			

4. Discussion

The results show that over a quarter (26%) participated in fights and experienced cyberbullying. There is a high prevalence of cyberbullying victimization and perpetration (73% and 76%, respectively), a widespread and prevailing cyberbullying behavior in the university environment. Cyberbullying has become a significant social and political issue in the world, sometimes leading to youth suicide. Governments are focusing on educational institutions to develop programs to combat cyberbullying in academic institutions. Factors such as anonymity, repetition, and a lack of structured environments complicate detection. Psychological support is crucial for students involved in cyberbullying attacks (Reyhani, 2015). The unique dynamics of social media may motivate or cause a significant number of children to engage in cyberbullying. Social media platforms promise privacy or anonymity; social media promotes sharing; communication through social media does not include face-to-face interaction; on social media, justice seems to mean bullying the bully; social media fosters a mob-like mentality, and we all crave likes, shares, and views (Organization for Social Media Safety, 2021).

Findings showed a collective and unique significant effect of gender, college, father's work, exposure to violence, no interest in life, suicide ideation, anger, and low self-control on general cyberbullying. Slightly above thirty five percent (35.8%) of the sample reported cyberbullying outside the university campus. About half of the sample (45.3%) reported depression or hopelessness, lost interest in life or life enjoyment (45.3%), a willingness to die (32.8%), or suicide (30%). Cyberbullying can lead to mental health issues, increased stress, anxiety, depression, violent behavior, and low self-esteem, with long-lasting emotional effects even after the bullying has stopped. Cyberbullying can cause long-lasting emotional issues, including mood, energy, sleep, and appetite issues. Victims may experience self-doubt, worry, and lose inner peace. Cyberbullying can also tarnish a person's image and lead to enduring feelings of embarrassment and self-doubt (Gohal, Alqassim, Eltyeb, E. et al., 2023).

Significant differences are attributed to gender in general in relation to cyberbullying, cyberbullying victimization, cyberbullying perpetration, self-cyberbullying, vicarious cyberbullying, and low self-control. Studies show that in various educational settings, females are more likely to be involved in cyberbullying as victims than males. Cultural and sociological contexts influence this gender difference, with Asian countries, North America, and Europe exhibiting the most significant differences. These differences are attributed to dispositional and structural explanations. Boys socialize to be autonomous and goal-oriented, whereas girls' friendships are more intensive and intimate. Girls' socialization, positive self-focus on relationships, and empathetic connectedness suggest a greater interest in maintaining friendships and resolving conflict (Foody, McGuire, Kuldas, & O'Higgins, 2019).

There is a significant relationship between low self-control and violence victimization, violence participation, exposure to cyberbullying, knowledge of cyberbullying, knowledge of cyberbullying perpetration, self-cyberbullying, vicarious cyberbullying, and general cyberbullying. Additionally, there was a significant correlation between cyberbullying victimization, cyberbullying perpetration, self-cyberbullying, and vicarious cyberbullying. Youth cyberbullying behavior and overall cybercrime are associated with low self-control (LSC). Individuals with LSC are more likely to engage in cyberbullying than those with high self-control. Offline victimization and perpetration, or greater online time, mediate this association. (Sela-Shayovitz, Levy, & Hasson, 2024).

5. Conclusion

Cyberbullying has gained global attention, it remins under-researched in Arab countries. Cyberbullying victimization is more common among females than males, whereas cyberbullying perpetrations are higher among males compared to females. In the future, victims of cyberbullying may become be perpetrators, and vice versa.

Cyberbullying risk factors include personality traits (low self-control), organizational settings, and social culture. Cyberbullying may result in serious health and legal consequences. The results suggest focusing on different mechanisms of self-control to prevent cyberbullying behaviors among secondary school students. Victims of cyberbullying require a variety of services and support, including but not limited to legal, health, and psychological assistance. This paper suggests more qualitative and quantitative research to validate cyberbullying in these countries and recommends data collection dates, definitions, and multiple-source reporting for better understanding (Ruangnapakul, Salam, & Shawkat, 2019). Policy formation, law enforcement, and preventive measures are necessary to combat cyberbullying.

6. Implications for higher education prevention

The widespread prevalence of cyberbullying on campus is concerning and should prompt the university administration to take action on all levels. This includes policy formation, lawmaking, preventive measures and victim programs. **Law enforcement** The trans-organizational nature of cyberbullying behavior necessitates law enforcement on university campuses and beyond. Breaking the law may occur on campus and spread outside.

The student awareness campaign is necessary to educate students about the criminal nature of cyberbullying and the severe consequences it can have on campus. A wide range of services are needed for on-campus victims of cyberbullying. Some psychological problems, such as depression, fear, loss of interest in life, suicidal ideation, and suicide, are prevalent among on-campus victims of cyberbullying. In addition to psychological and health help, victims also require legal assistance. Services should be significantly female-oriented. Preventing cyberbullying on university campuses requires dealing with risk factors related to the perpetrators, victims, the university environment, and the broader social culture. Males perpetrate cyberbullying at a higher rate than females, while females experience more victimization than males—a mutually significant relationship between cyberbullying victimization and cyberbullying perpetration. We should consider this relationship when establishing preventive measures.

Low self-control is a significant predictor of cyberbullying behavior. Students with high on low self-control are high on cyberbullying perpetration. Such students require training, educational, and psychological courses to improve self-control.

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