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Navigating Cyberbullying: A Cross-National Study of Forms and Responses among University Students in an Online Learning Environment

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Abstract

The ubiquity of cyberspace has resulted in a surge in reported cyberbullying cases globally. Despite numerous studies investigating the impact of cyberbullying on students, research addressing its prevalence in the Middle East remains scarce. This exploratory study aims to assess the prevalence of cyberbullying among university students in six Middle Eastern countries: Jordan, Egypt, Iraq, Saudi Arabia, Kuwait, and Qatar. The study seeks to identify common cyberbullying forms and examine students' responses to each, considering variations based on gender, year of study, study discipline, and country. A descriptive approach is followed to achieve the study objectives. A random sample of 2,642 students (1,887 female) participated in the study by completing an online survey about their experience with seven forms of cyberbullying, and the strategies they used to deal with each. A relatively low prevalence of cyberbullying is found among the sample, with 57.6% reporting that they never experienced any form of cyberbullying and 20% reporting experiencing cyberbullying only once. The most common forms of cyberbullying were exclusion (56%), harassment (51%), and flaming (44%). While differences in the prevalence of cyberbullying are found according to gender in two forms, stalking and flaming, no statistical differences according to study discipline are evident. Students in their later years are more likely to experience all forms of cyberbullying than students in their early years ($p < 0.05$). The differences are significant across countries, with Jordan being highest, followed by Egypt then Kuwait. Self-defending and confrontation are found to be the most common responses to cyberbullying. Overall, the sample reported using active responses to cyberbullying more than passive responses. Females and students in the arts and humanities are more likely to respond actively to cyberbullying compared to males and students enrolled in science disciplines (all $p < 0.05$). The findings of the study provide a better understanding of the prevalence of this phenomenon in the region and assist stakeholders in planning preventive strategies.

Keywords: *Cyberbullying, online learning environment, COVID-19 pandemic, university students.*

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Introduction

In response to the COVID-19 pandemic, educational institutions worldwide shifted to online and hybrid instruction modes (Katlen et al., 2022; Koh & Daniel, 2022; Rawashdeh et al., 2021). University students now rely on course management systems, video conferencing, and social media networking sites to engage in both educational and social interactions (Alghanmi & Nyazi, 2022; Almaiah et al., 2020; Jacob & Pillay, 2023; Katlen et al., 2022). These technologies offer students opportunities to interact, and share resources with others, and thus promote student learning and social interaction (Almomani et al., 2021; Kilinc et al., 2023; Knowles et al., 2023). While these technologies facilitate learning and collaboration, the extensive use of cyberspace has given rise to undesirable behaviours, notably cyberbullying (António et al., 2023; Barlett et al., 2021; Shin & Choi, 2021; Zakuan & Saian, 2022). Cyberbullying, a specific form of online aggression, manifests across digital platforms, including social media, messaging apps, and online forums (Al Qudah et al., 2020; Pang et al., 2023).

Cyberbullying involves deliberate and repeated harm, threats, or embarrassment using digital media by an individual or a group (Cáceres-Reche et al., 2019; Shaikh et al., 2020). Examples include threats, online mockery, unauthorized disclosure of personal information, spreading rumours, exclusion, identity impersonation, and online attacks (Ademiluyi et al., 2022; Yi & Zubiaga, 2023). Cyberbullying can be categorized into distinct behaviours such as harassment, exclusion, denigration, flaming, masquerade, outing, and stalking (Kowalski et al., 2019). Flaming entails transmitting angry, rude, or vulgar messages, while harassment involves repeated messaging. Cyberstalking includes threats, denigration involves sending cruel and possibly untrue information, masquerading is pretending to be someone else, outing is sharing private information, and exclusion is maliciously leaving someone out of an online group (Ademiluyi et al., 2022; Shaikh et al., 2020).

While cyberbullying differs from traditional bullying in its absence of physical aggression, it is strongly linked to social, emotional, and academic problems (Donat et al., 2020; Peled, 2019; Shaikh et al., 2020). Cyberbullying victims commonly experience emotional and psychological issues, reporting feelings of loneliness, sadness, anger, stress, and frustration (Al Qudah et al., 2020; Lee et al., 2023; Zakuan & Saian, 2022). Additionally, students subjected to cyberbullying exhibit difficulties adapting to university life, an increased likelihood of dropout, and a decline in

academic performance and achievement (Bernardo et al., 2020; Martínez-Monteagudo et al., 2019; Peled, 2019).

Cyberbullying has been investigated extensively among children and adolescents (Hinduja & Patchin, 2023; Zhu et al., 2021). However, attention has recently shifted to investigating this phenomenon in higher education settings (Shaikh et al., 2020). Research results suggest that cyberbullying is becoming a growing international phenomenon among university students in most countries across the world (Adebayo et al., 2020; Ifon, 2023; Kaur & Saini, 2023; Khine et al., 2020; Lee & Sanchez, 2018; Lee et al., 2023). Despite the international attention paid to cyberbullying, the field lacks studies in the Middle East region and Arab World, meaning information about the frequency of cyberbullying among university students in this area is scarce (AlQaderi et al., 2023).

An examination of the global literature on the prevalence of cyberbullying, as highlighted by Zhu et al. (2021), underscores significant variations across countries. From a socio-cultural psychology perspective, human behaviour is learned through interaction with others and culture plays a crucial role in shaping people's social behaviours (Henrich, 2015). Consequently, it is anticipated that different cultures would manifest different cyberbullying practices, forms, and responses.

Comprehending the diverse responses to cyberbullying is paramount, considering the potential for escalation and disproportionate reaction (Erişti & Akbulut, 2019). Although a comprehensive exploration of the responses of university students facing cyberbullying is lacking in the literature, existing studies identify broad categories such as seeking revenge, initiating a dialogue, ignoring, forgiving, or avoiding cyberbullying (Cao & Lin, 2015; Erişti & Akbulut, 2019; Na et al., 2015). These responses can be broadly classified into problem-focused and emotion-focused strategies (Völlink et al., 2013). Problem-focused responses involve addressing the person or environmental relationship directly, encouraging social support, or confrontation. On the other hand, emotion-focused responses come into play when resources are limited, often manifesting as avoidance or feelings of helplessness. While problem-focused strategies aim at resolution and prevention, emotion-focused strategies manage the emotional impact without necessarily addressing root causes (Jóhannsdóttir & Ólafsson, 2004; Zapf & Gross, 2001). Understanding these responses is crucial for developing effective interventions and support systems to mitigate the impact of cyberbullying.

Gender is a pivotal demographic factor in cyberbullying, extensively explored among university students (Marr & Duell, 2021; Shaikh et al., 2020). Females, in comparison to males, are less likely to perpetrate cyberbullying and more likely to be victims (Pörhölä et al., 2020; Raselekoane et al., 2019), a trend documented across various cultures (Adebayo et al., 2020; Pörhölä et al., 2020). However, it is important to investigate how student gender affects the prevalence of cyberbullying behaviour among university students in the Middle East region. Additionally, students' majors are a significant factor known to influence cyberbullying behaviours. For instance, a study of Egyptian undergraduates shows that students enrolled in social science majors reported higher rates of experiencing cyberbullying than those in medical or natural faculties (Arafa & Senosy, 2017). Students in medical specialties, due to the demanding nature of their majors, mostly use the internet for academic purposes, potentially reducing their encounters with cyberbullying (Saied et al., 2016).

Study Objectives

This study aims to comprehensively assess the prevalence of cyberbullying in the Middle East, covering six countries: Jordan, Egypt, Iraq, Saudi Arabia, Kuwait, and Qatar. It seeks to identify common forms of cyberbullying experienced by university students and explore variations based on gender, study discipline, study level, and country. Additionally, the research investigates students' responses when facing cyberbullying, examining differences based on gender, study discipline, year of study, and country. Specifically, the study aims to answer the following questions:

1. How prevalent is cyberbullying according to university students?
2. What are the most common forms of cyberbullying experienced by university students?
3. How does cyberbullying vary according to students' gender, country, year of study, and discipline?
4. What are university students' responses when they confront the various forms of cyberbullying?
5. Do university students' responses to cyberbullying differ according to gender, country, year of study, or discipline?

Methods

Research Design

A descriptive research approach is followed to achieve the study objectives (Creswell & Creswell, 2018). The researchers employ a self-report survey to collect data from university students about cyberbullying during online classes, to identify the most common forms of cyberbullying and the students' responses to these forms. Demographic data about students' gender, country, year of study, and discipline, provides valuable insight into the similarities and variations of cyberbullying within online courses across six nations.

Participants

A total of 2,642 students (755 male, 1,887 female) participated voluntarily in the study during the 2022 Spring semester. The participating students were enrolled in online elective courses at six universities in six countries in the Middle East region: Egypt, Iraq, Jordan, Saudi Arabia, Kuwait, and Qatar. In elective courses, students represent almost all study disciplines, genders, and years of study.

We include a total of 2642 participants in the final analysis. Most participants are female (71.4%) and study disciplines related to the arts and humanities (59.2%). The greatest proportion of the sample originate from Iraq (32.2%), Saudi Arabia (17.6%), and Jordan (14.0%). About 50% of the participants are in their early years of university education (years 1 and 2) (see Table 1).

Table 1

Participant distribution according to demographic variables

Demographics		Study Disciplines		
		Arts & Humanities	Sciences	Total
Gender	Female	1288 (82.3%)	599 (55.6%)	1887 (71.4%)
	Male	277 (17.7%)	478 (44.4%)	755 (28.6%)
Year of Study	First	353 (22.6%)	296 (27.5%)	649 (24.6%)
	Second	471 (30.1%)	204 (18.9%)	675 (25.5%)
	Third	377 (24.1%)	273 (25.3%)	650 (24.6%)
	Fourth	253 (16.2%)	231 (21.4%)	484 (18.3%)
	Fifth	69 (4.4%)	47 (4.4%)	116 (4.4%)
	Sixth	41 (2.6%)	26 (2.4%)	67 (2.5%)
Country	Jordan	229 (14.6%)	149 (13.8%)	378 (14.0%)

	Egypt	232 (14.8%)	139 (12.9%)	371 (13.7%)
	Iraq	483 (30.9%)	368 (34.2%)	851 (32.2%)
	KSA	183 (11.7%)	283 (26.3%)	466 (17.6%)
	Qatar	298 (19.0%)	64 (5.9%)	362 (13.7%)
	Kuwait	140 (8.9%)	74 (6.9%)	214 (8.1%)
Total		1565 (59.2%)	1077 (40.8%)	2642 (100.0%)

Data Collection Tool

A survey to assess the prevalence of cyberbullying is developed by the researchers based on cyberbullying literature and assessment tools (Betts et al., 2017; Dredge et al., 2015; Elipe et al., 2017).

The survey consists of three parts. The first asks for demographic information, including gender, year of study, study discipline, and country. The second part consists of 28 items that address the seven forms of cyberbullying (harassment, exclusion, flaming, denigration, masquerade, outing, and stalking). Four items are used to assess each form of cyberbullying. Students are required to respond on the frequency of experiencing each form, using a 5-point Likert scale (never happened, happened once, happens sometimes, happens often, and happens always).

The four items used to assess each form of cyberbullying are followed by six types of expected response: maintaining silence (*internalizing*), asking for help from others (*help-seeking*), ignoring the matter (*ignoring*), engaging in conversation with the abuser (*confronting*), defending oneself in front of others (*self-defending*), and trying to get revenge on the abuser (*planning revenge*). Students are required to select the type of response they would use if they were confronted by the specific form of cyberbullying.

Prior to the data collection, the survey was reviewed by a panel of five experts in the field for face validity and piloted with 30 students to check for clarity. Cronbach's alpha coefficients are computed to check the reliability of the survey. The coefficient values for the seven forms of cyberbullying, harassment, exclusion, denigration, flaming, masquerade, outing, and stalking, are 0.788, 0.779, 0.807, 0.786, 0.821, 0.800, 0.776, and 0.903, respectively. All values meet the benchmark for acceptable reliability (0.7), which indicates that the assessment tool has an acceptable internal consistency. To check the survey for construction validity, Pearson correlation coefficients are computed between each item and the total score for the form of cyberbullying the

item belongs to. All coefficient values are significant ($p < 0.01$). Pearson correlation coefficients are also computed between the score for each form of cyberbullying (the subscale) and the total score of the scale. The coefficient values for the seven forms of cyberbullying, harassment, exclusion, denigration, flaming, masquerade, outing, and stalking, are 0.675, 0.721, 0.824, 0.735, 0.698, and 0.727, respectively. All coefficient values are significant ($p < 0.01$). For further validation of the survey, confirmatory factor analysis is conducted. The results show that each set of 4 items loads above the 0.3 thresholds onto its respective factor, confirming the hypothesized 7 forms (factors) of cyberbullying with 4 items (indicators) per form, demonstrating convergent validity. The reliability coefficients for the 7 forms are $\alpha = 0.70, 0.64, 0.58, 0.56, 0.79, 0.45$, and 0.38. The model fit indices: $\chi 2 = 1059.24$, $df = 324$, $p < .001$, CFI = 0.78, TLI = 0.74, RMSEA = 0.089 (90% CI: 0.083 - 0.094). The cyberbullying survey items are listed in Appendix 1.

Data Collection

Instructors who teach online elective courses at six public universities in the six countries were invited to facilitate the distribution of the survey link to their students. The instructors who agreed to cooperate with the researchers invited their students to participate by responding to the survey and informing them that their participation was voluntary, and that their responses would remain anonymous. The instructors shared the survey link with their students by email. The responses from all participating classes in the six countries were gathered using the Survey Monkey tool and uploaded to SPSS for data analysis.

Data Analysis

The data have been cleaned, organized, and analysed using SPSS version 25. Descriptive statistics are used to present the data. Categorical variables are presented as frequencies (n (%)), while continuous variables are presented as means ± standard deviations. Associations between categorical variables are assessed using the chi-squared test where applicable. Mean differences across groups are examined using the independent sample t-test or ANOVA. The prevalences of cyberbullying and its forms are calculated as the frequency of any response other than “never happened” on the Likert scale. A p-value of less than 0.05 is considered statistically meaningful.

Findings

The prevalence of cyberbullying, and the most common forms of cyberbullying among university students

The percentages of students who reported experiencing cyberbullying in general and all its forms (from happened once to happens always) are calculated to assess the prevalence of cyberbullying and the most experienced forms. In our sample, 57.6% reported that they never experienced any form of cyberbullying. A further 20% reported experiencing cyberbullying once.

The most experienced forms are exclusion (56%), harassment (51%), flaming (44%), and outing (41%). Meanwhile, stalking (36%), denigration (35%), and masquerade (33%) are the least experienced. Table 2 shows the results.

Table 2

Participant responses about the prevalence of cyberbullying

Cyberbullying form	Never happened N (%)	Happened once N (%)	Happens sometimes N (%)	Happens often N (%)	Happens always N (%)
Harassment	5186 (49.0%)	2583 (25.0%)	1568 (15.0%)	690 (7.0%)	506 (5.0%)
Exclusion	4614 (44.0%)	2785 (26.0%)	1733 (16.0%)	793 (8.0%)	610 (6.0%)
Denigration	6880 (65.0%)	1741 (17.0%)	896 (9.0%)	526 (5.0%)	476 (5.0%)
Flaming	5837 (56.0%)	2370 (23.0%)	1224 (12.0%)	669 (6.0%)	415 (4.0%)
Masquerade	6986 (67.0%)	1526 (15.0%)	864 (8.0%)	577 (5.0%)	548 (5.0%)
Outing	6144 (59.0%)	1988 (19.0%)	1186 (11.0%)	643 (6.0%)	522 (5.0%)
Stalking	6720 (64.0%)	1733 (16.0%)	1010 (10.0%)	560 (5.0%)	487 (5.0%)
Total	42367 (57.6%)	14726 (20.0%)	8481 (11.5%)	4457 (6.1%)	3564 (4.8%)

Differences in cyberbullying according to students' gender, study discipline, year of study, and country

The results of the two independent groups t-test show no statistically significant differences between males and females in five of the forms. However, differences are found in two forms, stalking, and flaming. For flaming the difference indicates that females experience this form of cyberbullying more than males (t-value = 2.691, p-value=.007), the difference in stalking is in favour of females (t-value = 2.039, p-value = 0.042). Table 3 shows the results.

Table 3

Mean differences, using t-test, between genders experiencing cyberbullying forms

Cyberbullying form	Gender	N	Mean	Std. deviation	t	df	p-value
Harassment	Female	1870.00	7.72	3.67	-0.152	1293.978	.879
	Male	744.00	7.74	3.91			
Exclusion	Female	1874.00	8.22	3.68	0.359	2619	.720
	Male	747.00	8.16	3.78			
Denigration	Female	1873.00	6.63	3.58	-0.587	1217.706	.557
	Male	734.00	6.73	4.00			
Flaming	Female	1869.00	7.36	4.04	2.691	2608	.007
	Male	741.00	6.89	3.96			
Masquerade	Female	1860.00	6.65	4.05	-1.406	1271.795	.160
	Male	741.00	6.91	4.38			
Outing	Female	1862.00	7.19	4.20	-0.147	2596	.883
	Male	736.00	7.21	4.25			
Cyberstalking	Female	1861.00	6.70	3.95	-2.039	1275.174	.042
	Male	739.00	7.07	4.23			

The results of the t-test show no statistically significant differences between students' experiences of cyberbullying across study disciplines (arts and humanities vs. sciences) for all forms of cyberbullying. This result indicates that cyberbullying does not differ according to the study discipline.

However, comparisons between students' years of study (early years (1-2) vs. late years (3-6)) using the t-test show statistically significant differences (p-value <0.01) in their experiences of cyberbullying and its forms. Students in their late years of study experience all forms of cyberbullying more than students in their early years. Table 4 shows the results of the differences in cyberbullying according to gender, study discipline, years of study, and country.

Table 4

Mean differences, using t-test, between year of study experiencing cyberbullying forms

Cyberbullying form	Year of study	N	Mean	Std. deviation	t	df	p-value
Harassment	1 – 3	1950.00	7.63	3.73	-2.221	2611	.026
	4 – 6	663.00	8.00	3.76			
Exclusion	1 – 3	1961.00	8.02	3.67	-4.259	2618	.000
	4 – 6	659.00	8.73	3.77			
Denigration	1 – 3	1952.00	6.57	3.67	-1.986	2604	.047
	4 – 6	654.00	6.90	3.80			
Flaming	1 – 3	1952.00	7.09	3.98	-3.019	2607	.003
	4 – 6	657.00	7.64	4.12			
Masquerade	1 – 3	1947.00	6.63	4.10	-1.936	1074.675	.053
	4 – 6	653.00	7.00	4.31			
Outing	1 – 3	1944.00	7.10	4.20	-2.060	2595	.040
	4 – 6	653.00	7.49	4.23			
Cyberstalking	1 – 3	1946.00	6.71	4.00	-1.961	2597	.050
	4 – 6	653.00	7.07	4.11			

A one-way analysis of variance is used to compare students' experiences of cyberbullying across the six counties. Tye F-value for the differences between countries in the forms of cyberbullying and the total score are 16.741, 29.287, 13.315, 18.748, 16.195, 15.334, 20.790, which are statistically significant values (p-value <0.01), which indicates that there are statistically significant differences in the forms of bullying and the total score due to country (see Table 5). Post-hoc analysis reveals the direction of the differences between the countries. The results of the Scheffé test reveal statistically significant differences ($p < 0.01$) among all counties in general and among all forms of cyberbullying, with Jordan being the highest followed by Egypt, then Kuwait, Iraq, Qatar, and KSA. Figure 1 shows the differences between countries in cyberbullying and its forms.

Table 5

Mean differences, using ANOVA, between countries in terms of experiencing cyberbullying forms

Cyberbullying Form	Region	Mean ± SD	Sum of squares	df (within)	Mean square	F	p-value
Harassment	Jordan	8.9 ± 3.9	1136.73	5 (2608)	227.346	16.741	.000
	Egypt	8.1 ± 3.7					
	Iraq	7.8 ± 4.0					
	KSA	6.8 ± 3.3					
	Qatar	7.0 ± 3.3					
	Kuwait	7.7 ± 3.3					
Exclusion	Jordan	9.9 ± 3.9	1911.285	5 (2615)	382.257	29.287	.000
	Egypt	8.6 ± 3.6					
	Iraq	7.5 ± 3.7					
	KSA	7.4 ± 3.4					
	Qatar	8.2 ± 3.3					
	Kuwait	8.9 ± 3.8					
Denigration	Jordan	8.0 ± 4.1	891.214	5 (2601)	178.243	13.315	.000
	Egypt	6.5 ± 3.3					
	Iraq	6.6 ± 4.0					
	KSA	6.1 ± 3.5					
	Qatar	6.3 ± 3.2					
	Kuwait	6.4 ± 3.2					
Flaming	Jordan	8.9 ± 4.3	1467.651	5 (2604)	293.53	18.748	.000
	Egypt	7.5 ± 3.9					
	Iraq	7.0 ± 4.2					
	KSA	6.5 ± 3.7					
	Qatar	6.6 ± 3.5					
	Kuwait	7.3 ± 3.7					
Masquerade	Jordan	8.5 ± 4.5	1355.349	5 (2595)	271.07	16.195	.000
	Egypt	6.7 ± 4.0					
	Iraq	6.4 ± 4.3					
	KSA	6.2 ± 3.8					
	Qatar	6.4 ± 3.6					
	Kuwait	6.6 ± 4.0					
Outing	Jordan	8.9 ± 4.6	1313.323	5 (2592)	262.665	15.206	.000
	Egypt	7.1 ± 3.9					

	Iraq	6.8 ± 4.2					
	KSA	6.7 ± 3.9					
	Qatar	7.0 ± 4.1					
	Kuwait	7.3 ± 4.2					
Cyberstalking	Jordan	8.4 ± 4.3	1214.21	5 (2594)	242.842	15.334	.000
	Egypt	6.9 ± 3.9					
	Iraq	6.6 ± 4.1					
	KSA	6.2 ± 3.8					
	Qatar	6.4 ± 3.8					
	Kuwait	6.7 ± 3.6					
Total	Jordan	61.1 ± 24.8	55617.15	5 (2466)	11123.43	20.790	.000
	Egypt	51.2 ± 21.8					
	Iraq	48.9 ± 24.7					
	KSA	45.5 ± 21.9					
	Qatar	47.9 ± 21.9					
	Kuwait	50.3 ± 20.0					

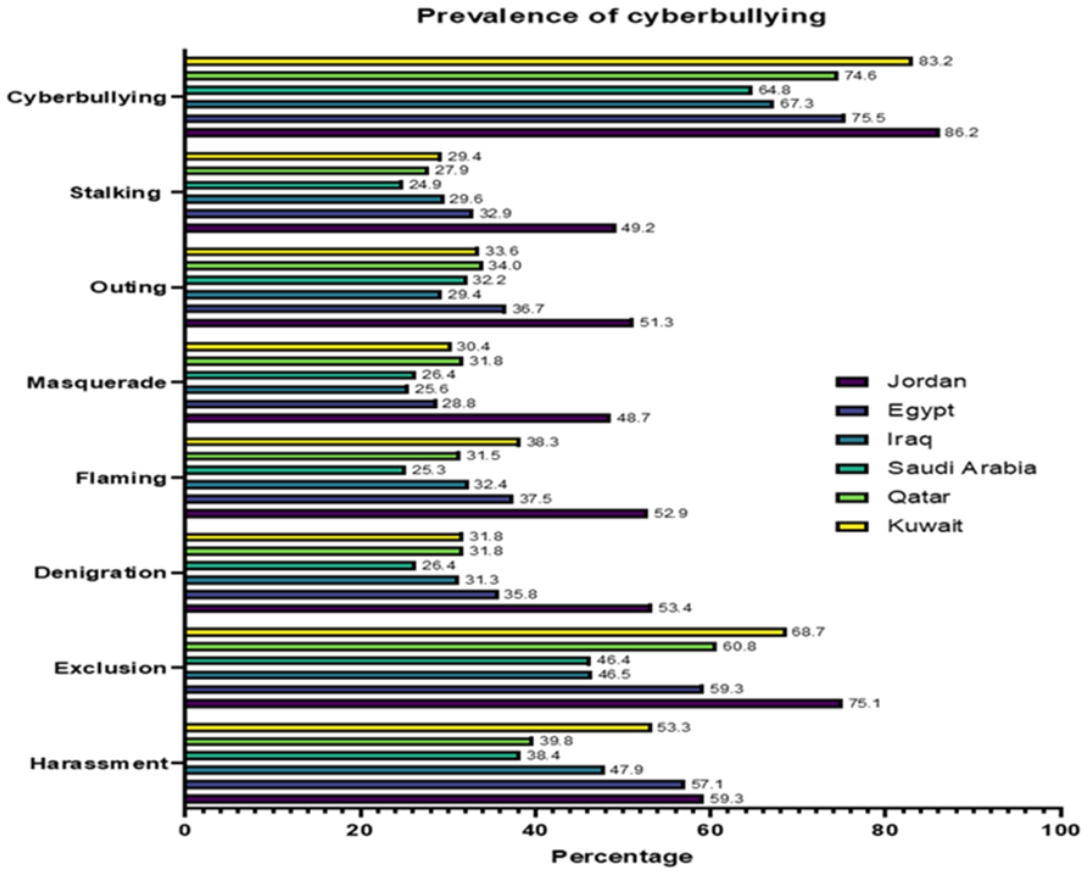

Figure 1

Prevalence of cyberbullying forms classified according to country.

The most common responses to each form of cyberbullying among university students

Frequencies of student responses to each form of cyberbullying and the overall responses are calculated. Table 6 shows the results.

Table 6

Participant responses to cyberbullying forms.

Cyberbullying Forms	Response					
	internalizing	help-seeking	ignoring	confronting	self-defending	planning revenge
Harassment	156 (5.9%)	203 (7.7%)	803 (30.4%)	642 (24.3%)	753 (28.5%)	85 (3.2%)
Exclusion	135 (5.1%)	491 (18.6%)	663 (25.1%)	727 (27.5%)	557 (21.1%)	69 (2.6%)
Denigration	101 (3.8%)	461 (17.4%)	381 (14.4%)	552 (20.9%)	924 (35.0%)	223 (8.4%)
Flaming	99 (3.7%)	278 (10.5%)	715 (27.1%)	640 (24.2%)	789 (29.9%)	121 (4.6%)
Masquerade	89 (3.4%)	679 (25.7%)	500 (18.9%)	525 (19.9%)	640 (24.2%)	209 (7.9%)
Outing	108 (4.1%)	396 (15.0%)	474 (17.9%)	809 (30.6%)	651 (24.6%)	204 (7.7%)
Stalking	107 (4.0%)	500 (18.9%)	474 (17.9%)	790 (29.9%)	562 (21.3%)	209 (7.9%)
Total	795 (4.0%)	3008 (16.0%)	4010 (22.0%)	4685 (25.0%)	4876 (26.0%)	1120 (6.0%)

In general, our sample reports self-defending and confronting as the most common responses to cyberbullying. For harassment, the most common response is ignoring. Confronting is the most common response to exclusion, outing, and stalking. Help-seeking is mostly used for masquerade, while self-defending is the most common response to denigration and flaming.

Differences in responses to cyberbullying according to gender, study discipline, year of study, and country.

The chi-square test is used to determine the differences between the students' forms of responses to the various forms of cyberbullying. Before performing the analysis, the six responses are classified into active responses, which are help-seeking, confronting, self-defending, and planning for revenge, and passive responses, which are internalizing and ignoring, to facilitate the comparisons.

In general, the sample reports using active responses to cyberbullying more than passive responses. Across all forms of cyberbullying, females tend to use active responses to cyberbullying more than males, and the results are statistically significant ($p < 0.01$) for denigration, masquerade, outing, and stalking. Interestingly, students in arts and humanities report using active responses to all forms of cyberbullying more than students in sciences disciplines, with all differences statistically significant ($p < 0.01$). Comparing student responses to cyberbullying according to years of study, all differences are not significant, indicating that students in their early and late years of study apply active responses to deal with cyberbullying. Table 7 shows the chi-square results comparing responses to cyberbullying forms according to gender and study discipline, while Figure 2 shows the differences between countries.

Table 7

Chi-squared results comparing responses to cyberbullying forms according to gender and study disciplines.

Cyberbullying form	Type	Female	Male	p-value	Arts & humanities	Sciences	p-value

Harassment	Passive	672 (35.6%)	287 (38.0%)	.263	525 (33.5%)	434 (40.3%)	.000
	Active	1215 (64.4%)	468 (62.0%)		1040 (66.5%)	643 (59.7%)	
Exclusion	Passive	566 (30.0%)	232 (30.7%)	.711	450 (28.8%)	348 (32.3%)	.050
	Active	1321 (70.0%)	523 (69.3%)		1115 (71.2%)	729 (67.7%)	
Denigration	Passive	305 (16.2%)	177 (23.4%)	.000	249 (15.9%)	233 (21.6%)	.000
	Active	1582 (83.8%)	578 (76.6%)		1316 (84.1%)	844 (78.4%)	
Flaming	Passive	569 (30.2%)	245 (32.5%)	.248	448 (28.6%)	366 (34.0%)	.003
	Active	1318 (69.8%)	510 (67.5%)		1117 (71.4%)	711 (66.0%)	
Masquerade	Passive	378 (20.0%)	211 (27.9%)	.000	302 (19.3%)	287 (26.6%)	.000
	Active	1509 (80.0%)	544 (72.1%)		1263 (80.7%)	790 (73.4%)	
Outing	Passive	371 (19.7%)	211 (27.9%)	.000	307 (19.6%)	275 (25.5%)	.000
	Active	1516 (80.3%)	544 (72.1%)		1258 (80.4%)	802 (74.5%)	
Stalking	Passive	377 (20.0%)	204 (27.0%)	.000	303 (19.4%)	278 (25.8%)	.000
	Active	1510 (80.0%)	551 (73.0%)		1262 (80.6%)	799 (74.2%)	

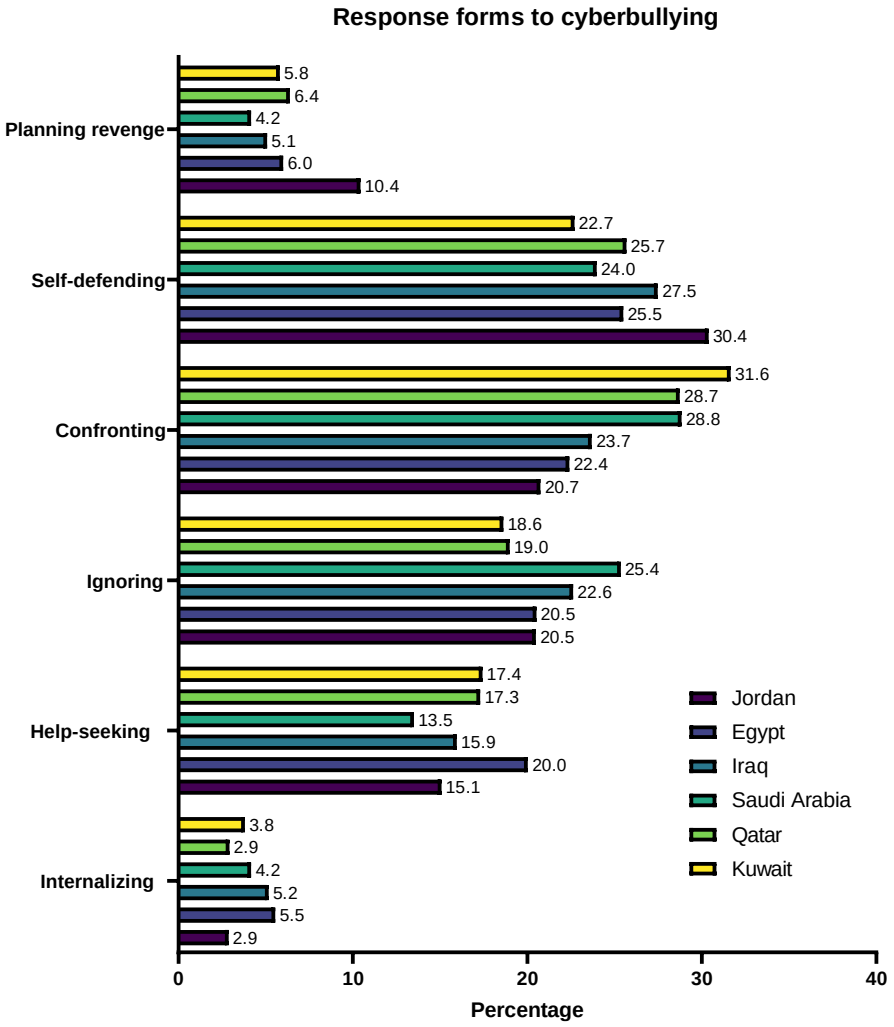

Figure 2
Responses to each cyberbullying form classified according to country.

Discussion, Conclusion and Implications

To the best of our knowledge, this study is the first comprehensive report on cyberbullying incidence and prevalence across six Arab countries during the digital shift to online learning environments. We note important gender differences in the experience of cyberbullying (mostly flaming and stalking) and highlight the most prevalent forms of cyberbullying among our sample. Our results demonstrate important comparisons between cyberbullying experiences across Arab countries. Furthermore, our study delves into various response patterns used by students to counter cyberbullying.

The study finds a relatively low prevalence of cyberbullying, with 57.6% of students reporting never experiencing cyberbullying and 20% reporting experiencing cyberbullying only once. These results may be partially attributed to the strong cultural values around respect, close-knit communities where individuals are more likely to know each other, and the influence of Islam which emphasizes ethical behaviours. Additionally, some Middle Eastern countries have implemented educational initiatives and strict cybercrime laws aimed at deterring physical and cyber harassment. It is important to note that this study took place at a time when digital transformation of learning was occurring due to COVID-19 lockdowns. Although one would expect higher rates of cyberbullying due to the digitalization of everyday life, published evidence indicates otherwise. In a meta-analysis of cyberbullying behaviours before and after the pandemic, the overall pooled prevalence of cyberbullying was significantly less during the pandemic compared to before (Huang et al., 2023). Such results could be largely explained due to the measures undertaken to prevent the further spread of the infection which had administrative managers or teachers oversee and track the well-being and safety of their staff and students which, in turn, might have enhanced their awareness of, and responsiveness to, the individual social and emotional health of those under their care (Azizi et al., 2021; Bacher-Hicks et al., 2022).

While the factors mentioned may discourage cyberbullying, it remains important to continue monitoring this issue and approach it sensitively, recognizing the diversity across the region and the complexity of cultural dynamics. Although this lower percentage seems positive, online environments can change over time and the reasons behind trends are multifaceted. The body of literature provides varying results regarding the prevalence of cyberbullying across nations. A study conducted among adolescents in 40 countries reports a rate of 3% of cyberbullying among

the participants, whereas a Malaysian study demonstrates a much higher rate of 86% among high school students (Craig et al., 2009). Discrepancies in these reported percentages could be attributed to a lack of agreed definitions of what cyberbullying entails and the inherent differences in each studied population. Furthermore, published studies use different study designs and cover different periods which may substantially influence the results.

The most common form of cyberbullying found in this study is social exclusion, closely followed by harassment. A similar study among Egyptian undergraduates shows that harassment is the most prevalent aspect of cyberbullying overall (Arafa & Senosy, 2017). The study indicates that, among their sample of 6,740 students, 61.8% of those who experienced cyberbullying had encountered harassment at least once in 6 months. A possible explanation for this phenomenon might relate to the inherent characteristics of cyberbullying. As cyberbullying can be done through any electronic device, cyberbullies can remain anonymous. The harassment and exclusion forms of cyberbullying often do not involve any legal action that could be taken, unlike other forms (Willard, 2007).

Female students are found to be significantly more likely to experience cyberbullying than their male counterparts, specifically flaming and stalking. Gender differences in cyberbullying vary within published studies. A self-report survey of 3,112 school-age children in Australia finds results consistent with ours, with females being more prone to being cyber victims (Campbell et al., 2012). In contrast, other studies report higher rates for males as victims of cyberbullying with many others indicating no significant differences between genders (Akbulut & Eristi, 2011; Beran & Li, 2006; Juvonen & Gross, 2008). Evolutionary psychological perspectives can provide an important contextual basis for gender differences in cyberbullying and victimization (Buss & Schmitt, 2019). Gender differences in aggression and violence indicate that males typically have a higher tendency to contribute to these behaviours (Bjorklund & Ellis, 2014; Cross et al., 2011; Tooby & Cosmides, 2015). Implementing conceptual frameworks of cyberbullying and cyberaggression could provide valuable insights to better understand the varying results (Wyckoff et al., 2019).

National differences in cyberbullying experience are evident in our results, with Jordan and Egypt having the highest scores. Although one could suggest that the countries participating in this study are somewhat similar in terms of culture and background, the evident overlap would not exclude differences in attitudes and definitions of what entails each form of cyberbullying. Furthermore, such results could be largely explained by how each country classifies and manages cyberbullying,

whether through educational policy or the legal system (Abu Dalhoum, 2023; Foody et al., 2017; McKeever, 2022). This does, however, highlight an important issue in cyberbullying research across the Arab world. Most studies focusing on cross-national or cross-cultural comparisons regarding bullying in general are conducted between Asian and European countries or the United States, with a stark lack of representation for Arab or Middle Eastern countries (Scheithauer et al., 2016; Smith et al., 2016). An accurate assessment of cyberbullying and its associated factors requires a rigorous methodological approach related to how victimization and bullying are conceptualized by individuals residing in those countries, with respect to culture and background (Scheithauer et al., 2016).

Ignoring, self-defending, and confrontation are among the most used responses to cyberbullying according to our sample. Student responses are analysed into two categories, active responses, which include, help seeking, confronting, self-defending, and planning for revenge, versus passive responses, which include internalization and ignoring. Overall, active response forms are more common than passive responses. Cyberbullying could be regarded as a stressful event for individuals. Hence, such responses could potentially be seen as ways of coping with cyberbullying. Lazarus and Folkman's (1984) influential study suggests that these responses in stressful contexts involve an assessment-driven transactional mechanism, leading individuals to employ either a problem-focused approach such as problem-solving or seeking assistance, or an emotion-focused method such as avoidance or disregard. Such categorizations are paralleled by active and passive coping strategies (Erbiçer et al., 2023). This theoretical framework is widely adopted in studies examining how different age groups respond to a variety of stressful events (Compas et al., 2001). Different responses can either perpetuate or limit further bullying behaviours. Studies consistently show that individuals using active responses to cyberbullying are less likely to be victimized while those who use passive methods, specifically avoidance, often report greater rates of cyberbullying (Heiman et al., 2019; Yang, 2021).

This study enhances the theoretical comprehension of cyberbullying in a higher education context, particularly within the framework of the online learning environment. The study expands the current body of knowledge by specifically examining cyberbullying in the Middle East region, which has received limited attention in previous research on the topic. The study identifies the most common forms of cyberbullying experienced by university students, the responses they exhibit to each form, and whether these forms and responses are affected by students' country,

years of study, and gender. The collected data provides valuable insights into the development of future theoretical frameworks and models in this field.

The study provides vital knowledge for students, educators, mental health specialists, researchers, and policymakers in higher education institutions. The results raise awareness among university students living in a technology-rich environment, about what behaviours are considered cyberbullying, bearing in mind the negative consequences of cyberbullying on students' academic and psychological well-being. The findings equip mental health specialists and educators with the knowledge needed to establish educational initiatives and interventions that aim to raise awareness and prevent cyberbullying among university students. They provide instructions for establishing a more secure online learning environment. The study develops a tool for assessing the prevalence of various forms of cyberbullying, which paves the way for future research into cyberbullying in the region.

Moreover, this study emphasizes the necessity of implementing comprehensive cyberbullying regulations in higher education institutions in the region. It supports university administrators and policymakers' efforts to establish legislative policies and structures to safeguard students against cyberbullying.

Conclusions

Given the prevalence of cyberbullying in universities across the globe, it is worthwhile to investigate this phenomenon at universities in the Middle East region. A relatively low prevalence of cyberbullying is found among our sample. The most common forms are exclusion, harassment, and flaming. While differences in the prevalence of two forms cyberbullying, stalking and flaming, are found according to gender, no differences according to study discipline are evident. Students in their late years are more likely to experience all forms of cyberbullying than students in their early years. The differences are significant across countries, with Jordan being highest followed by Egypt, then Kuwait. Self-defending and confrontation are the most used responses to cyberbullying. Overall, our sample reports using active responses to cyberbullying more than passive responses. Females and students in the arts and humanities are more likely to respond actively to cyberbullying than males and students enrolled in science disciplines. Altogether, the study findings have valuable theoretical and practical implications for students, educators, researchers, and policymakers.

Our study falls prey to several limitations. The cross-sectional design inherently produces bias by only capturing a snapshot of cyberbullying and its responses at one point in time, which limits causal relationship inference. Moreover, the reliance on self-report measures introduces limitations in individual responses due to social desirability or memory bias. The time at which the study took place was one of rapid digital transformation in educational spheres due to COVID-19. Albeit this context is crucial, it may only reflect the particular circumstances of online learning environments and not fully represent cyberbullying in conventional educational settings.

Future research should focus on employing a more systematic approach to cyberbullying in the region. Qualitative studies, intervention effectiveness evaluation, and longitudinal data could yield important insights with regards to this phenomenon, while our study and developed tool may establish the scaffold for future endeavours.

References

Abu Dalhoum, M. (2023, August 20). Jordan's new Cybercrime Law: Fines, freedom concerns, economic impact - Jordan News | Latest News from Jordan, MENA. Jordan News | Latest News from Jordan, MENA. https://www.jordannews.jo/Section-36/Opinion/Jordan-s-new-Cybercrime-Law-Fines-freedom-concerns-economic-impact-30427

Adebayo, D. O., Ninggal, M. T., & Bolu-Steve, F. N. (2020). Relationship between demographic factors and undergraduates' cyberbullying experiences in public universities in Malaysia. *International Journal of Instruction, 13*(1), 901–914. https://doi.org/10.29333/iji.2020.13158a

Ademiluyi, A., Li, C., & Park, A. (2022). Implications and Preventions of Cyberbullying and Social Exclusion in Social Media: Systematic Review. In *JMIR Formative Research* (Vol. 6, Issue 1). https://doi.org/10.2196/30286

Akbulut, Y., & Eristi, B. (2011). Cyberbullying and victimisation among Turkish university students. *Australasian Journal of Educational Technology, 27*(7). https://doi.org/10.14742/ajet.910

Al Qudah, M. F., Al-Barashdi, H. S., Hassan, E. M. A. H., Albursan, I. S., Heilat, M. Q., Bakhiet, S. F. A., & Al-Khadher, M. A. (2020). Psychological Security, Psychological Loneliness, and Age as the Predictors of Cyber-Bullying Among University Students. *Community Mental Health Journal, 56*(3), 393–403. https://doi.org/10.1007/s10597-019-00455-z

Alghanmi, S. S., & Nyazi, A. K. (2022). Exploring Students' Engagement in Distance Learning during the Pandemic of COVID-19: A Correlational Exploratory Design. *Turkish Online Journal of Educational Technology - TOJET, 21*(3), 46–62.

Almaiah, M. A., Al-Khasawneh, A., & Althunibat, A. (2020). Exploring the critical challenges and factors influencing the E-learning system usage during COVID-19 pandemic. *Education and Information Technologies, 25*(6), 5261–5280. https://doi.org/10.1007/s10639-020-10219-y

Almomani, E. Y., Qablan, A. M., Atrooz, F. Y., Almomany, A. M., Hajjo, R. M., & Almomani, H. Y. (2021). The Influence of Coronavirus Diseases 2019 (COVID-19) Pandemic and the Quarantine Practices on University Students' Beliefs About the Online Learning Experience in Jordan. *Frontiers in Public Health, 8*. https://www.frontiersin.org/articles/10.3389/fpubh.2020.595874

AlQaderi, N., Elamin, A. B. A., Abdelmonem, K. Y. A., Teir, H. J., & Andrade, G. (2023). Phone addiction, cyberbullying, and mental health amongst young adults in the United Arab Emirates: A cross-sectional study. *BMC Psychology, 11*(1), 313. https://doi.org/10.1186/S40359-023-01320-1/FIGURES/3

António, R., Guerra, R., & Moleiro, C. (2023). Cyberbullying during COVID-19 lockdowns: Prevalence, predictors, and outcomes for youth. *Current Psychology.* https://doi.org/10.1007/s12144-023-04394-7

Arafa, A., & Senosy, S. (2017). Pattern and correlates of cyberbullying victimization among Egyptian university students in Beni-Suef, Egypt. *The Journal of the Egyptian Public Health Association, 92*(2), 107–115. https://doi.org/10.21608/epx.2018.8948

Azizi, M. R., Atlasi, R., Ziapour, A., Abbas, J., & Naemi, R. (2021). Innovative human resource management strategies during the COVID-19 pandemic: A systematic narrative review approach. *Heliyon, 7*(6). https://doi.org/10.1016/j.heliyon.2021.e07233

Bacher-Hicks, A., Goodman, J., Green, J. G., & Holt, M. K. (2022). The COVID-19 Pandemic Disrupted Both School Bullying and Cyberbullying. *American Economic Review: Insights, 4(*3), 353–370. https://doi.org/10.1257/aeri.20210456

Barlett, C. P., Rinker, A., & Roth, B. (2021). Cyberbullying perpetration in the COVID-19 era: An application of general strain theory. *Journal of Social Psychology, 161*(4). https://doi.org/10.1080/00224545.2021.1883503

Beran, T., & Li, Q. (2006). The Relationship between Cyberbullying and School Bullying. *The Journal of Student Wellbeing*, 1. https://doi.org/10.21913/JSW.v1i2.172

Bernardo, A. B., Tuero, E., Cervero, A., Dobarro, A., & Galve-González, C. (2020). Bullying and Cyberbullying: Variables That Influence University Dropout. Comunicar: *Media Education Research Journal, 28*(64), 61–69.

Betts, L. R., Spenser, K. A., & Gardner, S. E. (2017). Adolescents' Involvement in Cyber Bullying and Perceptions of School: The Importance of Perceived Peer Acceptance for Female Adolescents. *Sex Roles, 77*(7), 471–481. https://doi.org/10.1007/s11199-017-0742-2

Bjorklund, D. F., & Ellis, B. J. (2014). Children, childhood, and development in evolutionary perspective. *Developmental Review, 34*(3), 225–264. https://doi.org/10.1016/j.dr.2014.05.005

Buss, D. M., & Schmitt, D. P. (2019). Mate Preferences and Their Behavioral Manifestations. *Annual Review of Psychology, 70*(1), 77–110. https://doi.org/10.1146/annurev-psych-010418-103408

Cáceres-Reche, M.-P., Hinojo-Lucena, F.-J., Ramos Navas-Parejo, M., & Romero-Rodríguez, J.-M. (2019). The phenomenon of cyberbullying in the children and adolescents population: A scientometric analysis. *Research in Social Sciences and Technology, 4*(2), 115-128. https://doi.org/10.46303/ressat.04.02.8

Campbell, M., Spears, B., Slee, P., Butler, D., & Kift, S. (2012). Victims' perceptions of traditional and cyberbullying, and the psychosocial correlates of their victimisation. *Emotional and Behavioural Difficulties, 17*(3–4), 389–401. https://doi.org/10.1080/13632752.2012.704316

Compas, B. E., Connor-Smith, J. K., Saltzman, H., Thomsen, A. H., & Wadsworth, M. E. (2001). Coping with stress during childhood and adolescence: Problems, progress, and potential in theory and research. *Psychological Bulletin, 127*(1), 87–127. https://doi.org/10.1037/0033-2909.127.1.87

Craig, W., Harel-Fisch, Y., Fogel-Grinvald, H., Dostaler, S., Hetland, J., Simons-Morton, B., Molcho, M., de Mato, M. G., Overpeck, M., Due, P., & Pickett, W. (2009). A cross-national profile of bullying and victimization among adolescents in 40 countries. *International Journal of Public Health, 54*(Suppl 2), 216–224. https://doi.org/10.1007/s00038-009-5413-9

Creswell, J. W., & Creswell, J. D. (2018). Research Design: Qualitative, Quantitative, and Mixed Methods Approaches. Sage Publications.

Cross, C. P., Copping, L. T., & Campbell, A. (2011). Sex differences in impulsivity: A meta-analysis. *Psychological Bulletin, 137(*1), 97–130. https://doi.org/10.1037/a0021591

Donat, M., Rüprich, C., Gallschütz, C., & Dalbert, C. (2020). Unjust behavior in the digital space: The relation between cyber-bullying and justice beliefs and experiences. *Social Psychology of Education, 23*(1), 101–123. https://doi.org/10.1007/s11218-019-09530-5

Dredge, R., Gleeson, J., & Garcia, X. D. L. P. (2015). The Development and Validation of the Social Networking Experiences Questionnaire: A Measure of Adolescent Cyberbullying

and Its Impact. *Violence and Victims, 30*(5), 798–812. https://doi.org/10.1891/0886-6708.VV-D-14-00040

Elipe, P., Mora-Merchán, J. A., & Nacimiento, L. (2017). Development and Validation of an Instrument to Assess the Impact of Cyberbullying: The Cybervictimization Emotional Impact Scale. Cyberpsychology, *Behavior, and Social Networking, 20*(8), 479–485. https://doi.org/10.1089/cyber.2017.0069

Erbiçer, E. S., Toprak, E., & Metin, A. (2023). Cyberbullying among adolescents in Turkey: The relationship between coping strategies and cyberbullying perpetration. *Child and Adolescent Mental Health, 28*(1), 67–75. https://doi.org/10.1111/camh.12622

Estévez, E., Cañas, E., Estévez, J. F., & Povedano, A. (2020). Continuity and Overlap of Roles in Victims and Aggressors of Bullying and Cyberbullying in Adolescence: A Systematic Review. *International Journal of Environmental Research and Public Health, 17*(20), Article 20. https://doi.org/10.3390/ijerph17207452

Foody, M., Samara, M., El Asam, A., Morsi, H., & Khattab, A. (2017). A review of cyberbullying legislation in Qatar: Considerations for policy makers and educators. *International Journal of Law and Psychiatry, 50*, 45–51. https://doi.org/10.1016/j.ijlp.2016.10.013

Heiman, T., Olenik-Shemesh, D., & Frank, G. (2019). Patterns of Coping With Cyberbullying: Emotional, Behavioral, and Strategic Coping Reactions Among Middle School Students. *Violence and Victims, 34*(1), 28–45. https://doi.org/10.1891/0886-6708.34.1.28

Henrich, J. (2015). Culture and social behavior. Current Opinion in *Behavioral Sciences, 3*, 84–89. https://doi.org/10.1016/j.cobeha.2015.02.001

Hinduja, S., & Patchin, J. W. (2023). Cyberbullying Fact Sheet: Identification, Prevention, and Response. In Cyberbullying Research Center (cyberbullying.org). https://cyberbullying.org/cyberbullying-fact-sheet-identification-prevention-and-response

Huang, N., Zhang, S., Mu, Y., Yu, Y., Riem, M. M. E., & Guo, J. (2023). Does the COVID-19 Pandemic Increase or Decrease the Global Cyberbullying Behaviors? A Systematic Review and Meta-Analysis. Trauma, *Violence & Abuse,* 15248380231171185. https://doi.org/10.1177/15248380231171185

Ifon, J. C. (2023). Management of Cyberbullying: A Qualitative Exploratory Case Study of a Nigerian University. International Journal of Bullying Prevention, 5(2). https://doi.org/10.1007/s42380-022-00124-y

Jacob, U., & Pillay, J. (2023). A Systematic Literature Review of Social Media Usage among People with Intellectual Disability. *Journal of Culture and Values in Education, 6*(3), 42-61. https://doi.org/10.46303/jcve.2023.19

Juvonen, J., & Gross, E. F. (2008). Extending the school grounds?—Bullying experiences in cyberspace. *The Journal of School Health, 78*(9), 496–505. https://doi.org/10.1111/j.1746-1561.2008.00335.x

Katlen, J. N., Manlapaz, M. R., & Hoffman, A. (2022). Considerations for Appropriateness of Virtual Learning in the Postpandemic Environment. *Journal of Nursing Education, 61*(9), 503–509. https://doi.org/10.3928/01484834-20220705-04

Kaur, M., & Saini, M. (2023). Indian government initiatives on cyberbullying: A case study on cyberbullying in Indian higher education institutions. *Education and Information Technologies, 28*(1). https://doi.org/10.1007/s10639-022-11168-4

Khine, A. T., Saw, Y. M., Htut, Z. Y., Khaing, C. T., Soe, H. Z., Swe, K. K., Thike, T., Htet, H., Saw, T. N., Cho, S. M., Kariya, T., Yamamoto, E., & Hamajima, N. (2020). Assessing risk factors and impact of cyberbullying victimization among university students in Myanmar: A cross-sectional study. *PloS One, 15*(1), e0227051. https://doi.org/10.1371/journal.pone.0227051

Kilinc, E., Tarman, B., & Yussupova, S. (2023). The Association Between College Students` Participation Behavior and Social Media Use. *Research in Social Sciences and Technology, 8*(2), 55-67. https://doi.org/10.46303/ressat.2023.11

Knowles, R., Camicia, S., & Nelson, L. (2023). Education for Democracy in the Social Media Century. *Research in Social Sciences and Technology, 8*(2), 21-36. https://doi.org/10.46303/ressat.2023.9

Koh, J. H. L., & Daniel, B. K. (2022). Shifting online during COVID-19: A systematic review of teaching and learning strategies and their outcomes. *International Journal of Educational Technology in Higher Education, 19*(1), 56. https://doi.org/10.1186/s41239-022-00361-7

Kowalski, R. M., Limber, S. P., & McCord, A. (2019). A developmental approach to cyberbullying: Prevalence and protective factors. In Aggression and Violent Behavior (Vol. 45). https://doi.org/10.1016/j.avb.2018.02.009

Lazarus, R. S., & Folkman, S. (1984). Stress, Appraisal, and Coping. Springer Publishing Company.

Lee, G., & Sanchez, M. (2018). Cyber Bullying Behaviors, Anonymity, And General Strain Theory: A Study Of Undergraduate Students At A South Eastern University In The United States. https://doi.org/10.5281/ZENODO.1467846

Lee, M. H. L., Kaur, M., Shaker, V., Yee, A., Sham, R., & Siau, C. S. (2023). Cyberbullying, Social Media Addiction and Associations with Depression, Anxiety, and Stress among Medical Students in Malaysia. *International Journal of Environmental Research and Public Health, 20*(4). https://doi.org/10.3390/ijerph20043136

Marr, K. L., & Duell, M. N. (2021). Cyberbullying and cybervictimization: Does gender matter? *Psychological Reports, 124*(2), 577–595. https://doi.org/10.1177/0033294120916868

Martínez-Monteagudo, M. C., Delgado, B., Inglés, C. J., & García-Fernández, J. M. (2019). Cyberbullying in the university setting. Relationship with family environment and emotional intelligence. *Computers in Human Behavior, 91*, 220–225. https://doi.org/10.1016/j.chb.2018.10.002

McKeever, C. (2022). Cyberbullying: What is it and how to stop it | UNICEF Jordan. https://www.unicef.org/jordan/stories/cyberbullying-what-it-and-how-stop-it

Pang, K. Y., Ku, W. L., Teng, J. H. J., Ling, P. O. H., & Ooi, P. B. (2023). The Prevalence and Association of Cyberbullying and Depression in the Malaysian Adolescent Population During the COVID-19 Pandemic. Https://Doi.Org/10.1080/17450128.2022.2159599. https://doi.org/10.1080/17450128.2022.2159599

Peled, Y. (2019). Cyberbullying and its influence on academic, social, and emotional development of undergraduate students. *Heliyon, 5*(3), e01393. https://doi.org/10.1016/j.heliyon.2019.e01393

Pörhölä, M., Cvancara, K., Kaal, E., Kunttu, K., Tampere, K., & Torres, M. B. (2020). Bullying in university between peers and by personnel: Cultural variation in prevalence, forms, and gender differences in four countries. *Social Psychology of Education, 23*(1), 143–169. https://doi.org/10.1007/s11218-019-09523-4

Pushpanadham, K., Mandal, S., & Sareen, S. (2023). Revisiting 'Great Media Debate': Technology-Mediated Learning and Ground Realities Across the Indian Institutes of Technology. *Research in Educational Policy and Management, 5*(1), 1-17. https://doi.org/10.46303/repam.2023.2

Raselekoane, N. R., Mudau, T. J., & Tsorai, P. P. (2019). Gender differences in cyber-bullying among first-year University of Venda students. *Gender and Behaviour, 17*(3), Article 3. https://doi.org/10.4314/gab.v17i3

Rawashdeh, A. Z. A., Mohammed, E. Y., Arab, A. R. A., Alara, M., & Al-Rawashdeh, B. (2021). Advantages and Disadvantages of Using e-Learning in University Education: Analyzing Students' Perspectives. *Electronic Journal of E-Learning, 19*(3), Article 3. https://doi.org/10.34190/ejel.19.3.2168

Saied, S. M., Elsabagh, H. M., & El-Afandy, A. M. (2016). Internet and facebook addiction among Egyptian and Malaysian medical students: A comparative study, Tanta University, Egypt. *International Journal Of Community Medicine And Public Health, 3*(5), 1288–1297. https://doi.org/10.18203/2394-6040.ijcmph20161400

Scheithauer, H., Smith, P. K., & Samara, M. (2016). Cultural Issues in Bullying and Cyberbullying among Children and Adolescents: Methodological Approaches for Comparative Research.

International Journal of Developmental Science, 10(1–2), 3–8. https://doi.org/10.3233/DEV-16000085

Shaikh, F. B., Rehman, M., & Amin, A. (2020). Cyberbullying: A Systematic Literature Review to Identify the Factors Impelling University Students towards Cyberbullying. *IEEE Access, 8*, 148031–148051. https://doi.org/10.1109/ACCESS.2020.3015669

Shin, S. Y., & Choi, Y. J. (2021). Comparison of cyberbullying before and after the covid-19 pandemic in korea. *International Journal of Environmental Research and Public Health, 18*(19). https://doi.org/10.3390/ijerph181910085

Smith, P. K., Kwak, K., & Toda, Y. (Eds.). (2016). School Bullying in Different Cultures: Eastern and Western Perspectives. Cambridge University Press. https://doi.org/10.1017/CBO9781139410878

Tooby, J., & Cosmides, L. (2015). Conceptual Foundations of Evolutionary Psychology. In The Handbook of Evolutionary Psychology (pp. 5–67). John Wiley & Sons, Ltd. https://doi.org/10.1002/9780470939376.ch1

Willard, N. E. (2007). Cyberbullying and Cyberthreats: Responding to the Challenge of Online Social Aggression, Threats, and Distress. Research Press.

Wyckoff, J. P., Buss, D. M., & Markman, A. B. (2019). Sex differences in victimization and consequences of cyber aggression: An evolutionary perspective. *Evolutionary Behavioral Sciences, 13*(3), 254–264. https://doi.org/10.1037/ebs0000150

Yang, F. (2021). Coping strategies, cyberbullying behaviors, and depression among Chinese netizens during the COVID-19 pandemic: A web-based nationwide survey. Journal of Affective Disorders, 281, 138–144. https://doi.org/10.1016/j.jad.2020.12.023

Yi, P., & Zubiaga, A. (2023). Session-based cyberbullying detection in social media: A survey. *Online Social Networks and Media, 36*. https://doi.org/10.1016/j.osnem.2023.100250

Zakuan, Z. Z. M., & Saian, R. (2022). Cyberbullying victimization during COVID-19: Psychological effects and the legal measures. *International Journal of Public Health Science, 11*(1). https://doi.org/10.11591/ijphs.v11i1.21047

Zhu, C., Huang, S., Evans, R., & Zhang, W. (2021). Cyberbullying Among Adolescents and Children: A Comprehensive Review of the Global Situation, Risk Factors, and Preventive Measures. *Frontiers in Public Health, 9*, 634909. https://doi.org/10.3389/FPUBH.2021.634909/BIBTEX

Appendix 1

Cyberbullying Survey Items

How often have you experienced these cases during your online classes?						
1- Harassment		never happened	happened once	happens sometimes	happens often	happens always
1	Making fun of a colleague's post/answer					
2	Putting a classmate in embarrassing situations during class activities					
3	Commenting in a hurtful way to anger others					
4	Provoking others and threatening them with offensive text messages					
How would you respond in case you were faced with the above?						
Response	Maintaining silence and feeling anxiety (Internalization)	Seeking help from others (Help-Seeking)	Ignoring the matter and not being affected (Ignoring)	Engaging in conversation with the abuser (Confronting)	Defending oneself in front of others (Self-Defending)	Planning to get revenge on the abuser (Planning Revenge)
How often have you experienced these cases during your online classes?						
2- Exclusion		never happened	happened once	happens sometimes	happens often	happens always
5	Refusing to accept a colleague to join a work or research group					
6	Preventing a colleague from participating in an educational activity					
7	Ignoring comments or questions posted by a colleague					
8	Excluding a colleague from electronic chat rooms					
How would you respond in case you were faced with the above?						
Response	Maintaining silence and feeling anxiety (Internalization)	Seeking help from others (Help-Seeking)	Ignoring the matter and not being affected (Ignoring)	Engaging in conversation with the abuser (Confronting)	Defending oneself in front of others (Self-Defending)	Planning to get revenge on the abuser (Planning Revenge)
How often have you experienced these cases during your online classes?						
3- Denigration		never happened	happened once	happens sometimes	happens often	happens always
9	Spreading malicious rumours about a colleague					

10	Publishing personal photos of a colleague after they were distorted via social media					
11	Slandering a colleague to his/her friends via electronic programs					
12	Posting videos of a colleague after they were distorted on social media					
How would you respond in case you were faced with the above?						
Response	Maintaining silence and feeling anxiety (Internalization)	Seeking help from others (Help-Seeking)	Ignoring the matter and not being affected (Ignoring)	Engaging in conversation with the abuser (Confronting)	Defending oneself in front of others (Self-Defending)	Planning to get revenge on the abuser (Planning Revenge)
How often have you experienced these cases during your online classes?						
4- **Flaming**		never happened	happened once	happens sometimes	happens often	happens always
13	Sending offensive messages against a colleague					
14	Leading a text war against a colleague					
15	Incitement of prejudice and hostility against a colleague					
16	Comment negatively on everything a colleague posts					
How would you respond in case you were faced with the above?						
Response	Maintaining silence and feeling anxiety (Internalization)	Seeking help from others (Help-Seeking)	Ignoring the matter and not being affected (Ignoring)	Engaging in conversation with the abuser (Confronting)	Defending oneself in front of others (Self-Defending)	Planning to get revenge on the abuser (Planning Revenge)
How often have you experienced these cases during your online classes?						
5- **Masquerade**		never happened	happened once	happens sometimes	happens often	happens always
17	Create fake accounts to post information about a colleague					
18	Stealing a colleague's account and using it to abuse others					
19	Create an account in the name of a colleague and use it to communicate with others					
20	Impersonating a woman or a man to deceive others					

How would you respond in case you were faced with the above?						
Response	Maintaining silence and feeling anxiety (Internalization)	Seeking help from others (Help-Seeking)	Ignoring the matter and not being affected (Ignoring)	Engaging in conversation with the abuser (Confronting)	Defending oneself in front of others (Self-Defending)	Planning to get revenge on the abuser (Planning Revenge)
How often have you experienced these cases during your online classes?						
6- Outing		never happened	happened once	happens sometimes	happens often	happens always
21	Publishing information about a colleague causing him/her embarrassment					
22	Taking photos and videos and publishing them without permission from their owner					
23	Publish information sent privately to a colleague to everyone					
24	Broadcasting private conversations/calls of a colleague without his/her knowledge					
How would you respond in case you were faced with the above?						
Response	Maintaining silence and feeling anxiety (Internalization)	Seeking help from others (Help-Seeking)	Ignoring the matter and not being affected (Ignoring)	Engaging in conversation with the abuser (Confronting)	Defending oneself in front of others (Self-Defending)	Planning to get revenge on the abuser (Planning Revenge)
How often have you experienced these cases during your online classes?						
7- Stalking		never happened	happened once	happens sometimes	happens often	happens always
25	Collect photos of a colleague without permission					
26	Tracking the news of a colleague to spy on him/her					
27	Recording a colleague's calls without his/her knowledge					
28	Spying on a colleague's private conversations					

	without his/her knowledge					
How would you respond in case you were faced with the above?						
Response	Maintaining silence and feeling anxiety (Internalization)	Seeking help from others (Help-Seeking)	Ignoring the matter and not being affected (Ignoring)	Engaging in conversation with the abuser (Confronting)	Defending oneself in front of others (Self-Defending)	Planning to get revenge on the abuser (Planning Revenge)