

Effect of Cyberbullying and Sexting on Adolescents in Jordan; Exploratory Research

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Abstract

Objective: Bullying of school-aged children is not new and has been well-established as a common and serious problem in society. The aim of the current study is to explore the nature of cyberbullying in a sample of Jordanian adolescents. **Method:** The study used the quantitative approach and opted for the Delphi Technique, an online survey of adolescents, and an interview-based research approach following with the reviewing of the responses in order to identify the trends and nature of cyberbullying in a sample of Jordanian adolescents. The population sample consists of adolescents from two private schools in Jordan in the Middle East. The combined Adolescents sample of both schools totals approximately 6,000 students. **Results:** The results of this study reveal that significant numbers of adolescents are sending or receiving sexually explicit photos. The results also suggested that prevalence rates are high in four main categories of cyberbullying. Also, there is a difference in gender and educational level as females are subjected to more incidences of cyberbullying, and 4th grades students have a more significant value of cyberbullying involvement. **Conclusion:** It is essential to activate the role of the media and education systems in training youths about the risks of cyberbullying to improve adolescent feelings about the value of treating others well and engaging in objective cultural dialogue with them, as well as the strategies for avoiding it.

Keywords: Cyberbullying, sexting, Jordan, online communication, adolescent

1. Introduction

The amount of data that can be stored and shared over the internet is theoretically boundless. Information is always available to us, whether fact, fiction, biased, or inaccurate. With the

invention of the smartphone and other mobile gadgets, communication has also grown more practical, making it easier and faster for people to communicate globally. Children of the 21st century have become known as digital natives: "those born after 1980...when social, digital technologies came online";¹ who surf the internet for their interests and frequently seek people who share them.² Cyberbullying and sexting are two particular online risks that young internet users are increasingly facing.

The intentional and ongoing use of a digital communication tool to harass, humiliate or intimidate someone is known as cyberbullying.³ Cyberbullying mainly comprises name-calling, threats, and impersonation or claiming to be someone else online through a variety of methods, including text or photo messages, chat rooms, and social networking websites.⁴ Sexting has been characterized as the sending, receiving, and/or forwarding of sexually suggestive messages containing sexually arousing text, images, and/or videos, primarily via cell phones as well as e-mails, instant messages (IM), and online social networks.⁵ The prevalence figures for sexting in the global environment range from 9.6% to 54%.^{6,7}

Teenagers, particularly young people, are more reliant on new communication technology. Specifically, the widespread cell phone (with its text messaging and still/video camera) and the easy accessibility to others through the Internet (e.g., Facebook, Twitter, instant messaging) have drastically altered when, how, and what youth acquire about each other and the world.⁸ Not all of the results of this expanded access have been entirely favourable. As mentioned above, cyberbullying (bullying through e-mail, text messages, Facebook, etc.) has evolved into a contemporary method of being aggressive or intimidating, particularly for adolescents.⁹ Adolescents can now more easily access professional and amateur sexually explicit media and other sites connected to sexuality because of the Internet. Numerous researchers have investigated how adolescents perceive, choose, and use such websites, as well as the potential implications.¹⁰⁻¹² One of the implications of this body of literature is that adolescents may be more at stake than adults for adverse effects related to exposure to sexually explicit websites.¹⁰ Sexting is an even more recent way for adolescents to be exposed to explicit information.

Most cases of internet misbehaviour, like sexting, cyberbullying, and sharing of inappropriate material start off-campus. Parents should be the first line of defence when it comes to online safety concerns, but it is frequently up to the school staff, notably teachers, counsellors, or administrators, to deal with online safety issues when they cross over onto the school campus.¹³ However, educators shouldn't have to handle these problems by themselves. Parents should be responsible for monitoring digital use, teaching children about cyber safety, and routinely enforcing tech policies outside of the classroom. It is unclear, though, whether or not parents are willing to take on these responsibilities. According to Ybarra and Mitchell (2004),¹⁴ students who had parents who did not regularly check on their internet activity were more likely to engage in cyberbullying. Parents may be less likely to take significant action that could have a long-lasting impact on a child's future online conduct because of this apparent lack of understanding of a child's online activity.

Jordan is one of the countries with fixed Internet network performance improving at an advanced level. In January 2022, there were 6.87 million internet users in Jordan. In Jordan, 66.8% of the population had access to the Internet as of the beginning of 2022. According to a Kepios analysis,

the number of internet users in Jordan increased by 33 000 (+0.5%) between 2021 and 2022.¹⁵ The use of social media is growing rapidly. Young people are being introduced to the internet world at an ever-increasing rate, and it is interesting to see how this generation of adolescents presents themselves online versus in person. The probability of adolescents engaging in cyberbullying, sexting, and fake profile behaviour may rise when they start to present a different personality online than they do in reality.¹⁶ These actions could all be harmful. Research on the topic would benefit adolescents by asking how they perceive their online behaviour in comparison to their physical behaviour. Additionally, it might make adolescents more aware of how they behave differently online than they do in real life, which could help them avoid some of these negative effects. It would also act as a manual for others on better-handling integrity online and stopping some undesirable behaviours.

The available research typically only addresses relationships between some of these phenomena or focuses on a single issue. Hence, current publications have connected cyberbullying with challenging Internet use,¹⁷ inappropriate Internet use and sexting¹⁸ and cyber abuse victimization and enactment with cyberbullying victimization and aggression,¹⁹ sexting with cyber abuse enactment and victimization^{20,21} and preparing with sexting and cyberbullying victimization.²² Nevertheless, to our knowledge, the combination of this group of risks has not been examined in order to create potential risk strategies.

Research Background

Bullying of school-aged children is not a new phenomenon and has been well-established as a common and serious problem in society. Most children and adolescents likely have stories to share about either their own experiences of bullying or victimization or witnessing acts of aggression toward others. The age-old problem of being victimized by bullies has often been viewed as a normal part of growing up or even a "rite of passage" for children and adolescents.²³ This outlook began to change with the innovative research on bullying and victimization that Olweus conducted in the late 1970s.²⁴ Olweus' (1978)²⁴ research shed new light on the detrimental effects on youth development that have been linked to bullying and victimization. His work spawned other research on this phenomenon, which resulted in an increased awareness of bullying and victimization as a widespread societal problem. Due to this increased research and increased attention by the mass media, society first began to recognize and then attend to the detrimental effects of bullying and victimization on youth. For example, in Norway, the suicides of three youths, which were thought to be related to severe bullying by their peers, were reported in the newspaper.

The suicides received national attention resulting in a nationwide campaign against bully/victim problems in Scandinavia.²⁵ Other countries were influenced by the attention that this phenomenon received in that part of the world, which led to increased national interest. The attention that bullying has received in recent years is well-deserved, as research indicates that among American school children, approximately 30% are involved as either perpetrator (13.0%), victims (10.6%), or bully/victims (6.3%) of some type of bullying.²⁶

"The British National Children's Home (2005) survey on bullying discovered that 58% of students have not told their parents or any other adult about their online experiences".²⁷ As A

result, most school personnel are unaware of many bullying problems.²⁸ In one study, it was found that the majority of the teachers stated that they did not know how to deal with indirect bullying.²⁸ All caregivers, providers, and educators must become aware of this global issue, as we can all play a role. The Center for Safe and Responsible Internet Use suggests cyberbullying affects students globally as Australian and American children stay home from school because they feel threatened, and Scandinavian children are fearful of using their school locker rooms,²⁹ while in Japan, Cyberbullying is particularly dangerous for adolescents and teens who are susceptible to depression and anxiety, and tragically caused the murder of a student in Japan.³⁰

Although cyberbullying occurs in the virtual world, its effects are also felt by its victims in the actual world.³¹ These may occasionally result in suicide, although they may include behavioral and emotional issues. Numerous studies have been done on the connection between emotional problems and cyberbullying in several countries. For example, Henson, B. (2012)³¹ reported that around 50% of 184 American students who had been cyberbullied had gone through emotional challenges, such as anger, sadness, frustration, embarrassment, and fear. The researchers also listed depression and low self-esteem as consequences of cyberbullying. According to Chin (2011),³² who conducted a study of 211 adolescents in Hawaii, depression and anxiety were both markedly more severe in cyber-victims than in nonvictims. According to research, both bullies and victims struggle with their emotions. For example, Chang and colleagues (2013)³³ conducted a study of 10th graders in Taiwan to look into the relationships between traditional bullying, cyberbullying, depression, and self-esteem. They discovered that victims, bullies, and bully-victims all displayed low self-esteem, and victims, bullies, and bully victims all displayed higher levels of melancholy. According to Canadian academics Bonanno and Hymel (2013),³⁴ exposure to cyberbullying frequently leads to depression and suicidal thoughts. Although there is a strong association between psychological changes and cyberbullying, several researchers have debated whether or not these symptoms are the reason or the consequence of cyberbullying. Adolescents, for example, may regularly utilize the Internet to make friends in a digital setting owing to social isolation or depression, but they later become victims of cyberbullying due to their ease of access and emotional vulnerability. Behavior problems are frequently unavoidable if emotional cyberbullying-related issues are not managed. There is a strong correlation between cyberbullying and a number of behavioral issues, including noncompliance, aggression, interpersonal violence, substance addiction, and delinquency. Although physical harassment is not a component of cyberbullying, research repeatedly shows that victims of cyberbullying frequently engage in antisocial behaviors such as substance abuse, school violence, and criminality.³⁵ Rule-breaking activities like stealing, cheating, smoking, drinking, and destroying property are all significantly related to cyberbullying. There have been multiple media stories on suicides triggered by cyberbullying that have happened in various nations. Cyberbullying frequently increases adolescents' risk of suicide. One such example is Rehtaeh Parsons, a 17-year-old Canadian, who committed suicide in April 2013 as a result of being bullied.³⁶ Hinduja and Patchin (2013)³⁵ gathered information on 1963 American middle school students and discovered that those who participated in cyberbullying both as bullies and victims had higher levels of suicidal ideation and attempted suicide at higher rates than those who did not.

Problem Statement

Jordan ranks as one of the countries whose fixed Internet network performance is improving at an advanced level. The social media world is exploding. Adolescents and young are being exposed to the digital world at an ever-increasing rate. Few studies have examined how this generation of adolescents portray themselves online versus face-to-face. When adolescents begin to have a different persona online than they do in real life, the possibility of engaging in cyberbullying, sexting, behaviour may increase. All of these behaviours can be destructive. Surveying adolescents' perceptions of their online behaviours as opposed to their real-world conduct would contribute to the knowledge of the subject. It also could help adolescents identify with the fact that they act differently online than they do in the real world, which might aid in preventing some of these destructive consequences. Finally, it would serve as a guide to others on how to better address integrity online and curb some of these bad behaviours. Previous research has mainly examined one or just a few common media of cyberbullying (text messages, e-mail); and/or has measured cyberbullying as a global category. However, different media have different characteristics; we distinguish seven media of cyberbullying. We examine age and sex differences, which have not been consistent in previous research. Cyberbullying causes distress,³⁷ but its impact relative to traditional bullying is uncertain. The possible breadth of the audience for cyberbullying (on websites or by circulating picture clips) might heighten the impact, but the possibility of blocking electronic compared to face-to-face harassment might lessen the impact. As in many countries around the world, Jordanian adolescents and teenagers suffer from Cyberbullying. The researcher, through this study, will search all that factors in Jordanian schools.

According to statistics, Jordan is one of the countries where mobiles are widely used, especially among teenagers who use them to phone their parents and peers and send SMSs to their friends. Cyberbullying – or bullying through the use of technology – is a growing phenomenon that is currently most commonly experienced by young people, and the consequences manifested in schools. The spread of this phenomenon is widely noticed nowadays, and hence a new kind of language seems to appear among mobile users, especially teenagers. It is a completely individual way to express yourself whenever and however you like to send your text messages. Living in Jordan, one can notice that there are many problematic areas within this society when it comes to language use. Some of these are; cyberbullying and sexting on adolescents. Such problematic areas are interesting to investigate in Jordanian society.³⁸ Bullying was found to be substantially connected with students' emotional well-being and psychosomatic symptoms in one nationwide study (N = 1166) that looked at bullying among teenage school students in Jordan. Compared to non-bullied students, bullied students complained more frequently about regular fatigue, anxiety, and vertigo. The study has advised additional research to analyze bullying and its contributing elements in Jordanian culture.³⁹ The incidence of bullying was 47% (N = 433) in another study that examined the experience of bullying in a sample of Jordanian schoolchildren from Amman. Unlike non-bullied pupils, bullied kids were likelier to report skipping class and complaining about it.⁴⁰ Students from lower socioeconomic class households are more likely to become bullied victims. Bullied students reported increased rates of tobacco use. The HBSC survey also revealed that bullying significantly influenced smoking and drinking.⁴¹ According to a different study, kids who experienced bullying had a considerably increased probability of starting to

smoke.⁴² Even after controlling for childhood familial history, a longitudinal Finnish study found that being often assaulted at the age of eight predicted daily heavy smoking.⁴³ Since only a few studies have examined bullying and the factors contributing to it in Jordanian society, the current research is intended to fill this gap.

Research aims

The aims of the current study are to explore the nature of cyberbullying in a sample of Jordanian adolescents. There has been no published research on cyberbullying in Jordan (to our knowledge), even though Jordan is a nation with one of the longest usages of mobile phones. We aimed to investigate prevalence rates in four main categories of cyberbullying (text messaging, sexting, e-mail, and picture/video clip).

Research Questions

This study aimed to provide an understanding of the effect of online media, cyberbullying, sexting, text messaging, picture/video clip, and e-mail on adolescent's behaviour in Jordan. The questions to be answered by this study are:

1. What are the effects of cyberbullying on Jordanian adolescents?
2. What is the prevalence rate of cyberbullying (text messaging, sexting, e-mail, and picture/video clip) in Jordan?
3. How gender differences resulted in an increased risk of cyberbullying incidences?
4. Is there any difference in cyberbullying incidence according to the educational level of adolescents?

2. Methodology

Research design

The study used the quantitative approach and opted for the Delphi Technique, an online survey of adolescents, and an interview-based research approach following with the reviewing of the responses in order to identify the trends and nature of cyberbullying in a sample of Jordanian adolescents. The interviews were conducted online so the participants could openly share their incidence. It also ensures the participants' safety, as cyberbullying victims reported having psychological problems. The responses remained anonymous in front of other participants.

Participants' demographic characteristics, such as gender, age, and educational level, are also included in the interview questions. Participants were also asked about their availability of smartphones and the use of online social networking platforms. The category of cyberbullying participants faced was the main concern of the interview in order to understand the prevalence rate of each of the four categories.

Participants

The population sample consists of Adolescents from two private schools in Jordan in the Middle East. The combined adolescents' sample of both schools has approximately 6,000 students. The research is conducted at the end of 2018.

Statistical analysis

After the study data were entered into the statistical software for processing, the Cronbach alpha formula was used to check that the scale items were internally consistent. The reliability coefficient has reached 0.865, which is sufficient to apply this instrument to the individuals in the study sample. The social sciences statistical software SPSS was used to examine the data collected. Descriptive statistical methods (means, frequencies, and percentages) have been used to define the characteristics of the study sample and respond to the research questions. To determine whether there are statistically significant differences in the responses of the study sample participants towards the study dimensions, one-way ANOVA, t-test, and f-test for independent samples were utilized.

Ethical consideration

Before starting the research, approval was taken from the school's administration and the participants' parents. An e-mail describing the study was sent to the school as well as to the parents. The e-mail highlighted the nature of the survey and was sent to parents to allow them to decide whether they allowed their child to participate in the research or not. Less than 1 % of parents declined to have their child participate, and all students whose parent(s) allowed their participation did so.

3. Results

Table 1 highlights the information regarding the gender, age, and education level of the participants. As indicated, 59% of the participants are female, which can be justified by saying that females are prone to be the victim of cyberbullying and sexting in the studied population. As far as age is concerned, 11 to 13 years children are subjected to an increased number of cyberbullying cases. Upon asking about the availability of smartphones, 95% of the participants reported having their personal mobile phones, and 83% stated that they use online social networking platforms. The purpose of using social media was not included in the research question, but mixed opinions have been found upon asking. Half of them reported that they use online platforms for their entertainment, and the other half of the participants stated that they use them for educational purposes.

TABLE 1: Demographic characteristics of participants

Factor	Group	Number	Percentage
Gender	Female	3549	59.15%
	Male	2451	40.85%
	Total	6000	100%
Educational level	First	1066	17.77%
	second	2115	35.25%

Age	Third	1998	33.30%
	Fourth	821	13.68%
	Total	6000	100%
	11-13	3179	52.98%
Availability of smartphone	14-16	2041	34.02%
	17-19	780	13.00%
	Total	6000	100%
	Yes	5678	94.63%
Use of online social networking platforms	No	322	5.37%
	Total	6000	100%
	Yes	5006	83.43%
	No	994	16.57%
	Total	6000	100%

TABLE 2: Prevalence rates in four main categories of cyberbullying

Factor	Mean	SD	Prevalence rate
Sending people inappropriate messages and images	4.38	1.64	High
Threatening others through texts and images	3.14	0.77	Medium
Publishing fake information, pictures, messages about people	3.09	0.65	Medium
Sending offensive videos, images, and sketches that involve sexual harassment against the other gender	3.91	0.96	High
Sending private videos and pictures to breach someone's privacy	3.88	0.91	High
Sending offensive e-mails to others	3.67	0.71	Medium
Character assassination and humiliation	3.66	0.83	Medium
Sexually explicit cell phone pictures (sexting)	4.09	1.11	High

As the above table indicates, the most prevalent type of cyberbullying among Jordanian adolescents is sending inappropriate messages and images to others, with a mean value of 4.38, followed by sexting (M=4.09). Sexual harassment through sending offensive videos, images, and sketches (M=3.91) and breaching someone's privacy through sending private videos and pictures (M=3.88) also have a high prevalence rate in the studied sample. Threatening others through texts and images, publishing fake information, pictures, messages about people, sending offensive e-mails to others, and character assassination and humiliation have a medium prevalence rate in the studied sample with a mean value of 3.14, 3.09, 3.67, and 3.66, respectively.

The current research also attempted to address the effect of cyberbullying on Jordanian adolescents. In order to achieve this objective, the means and standard deviation of the responses were obtained towards the most-frequent effects of cyberbullying among adolescents in Jordan. Table 3 below demonstrates the responses.

TABLE 3: Effects of cyberbullying on Jordanian adolescents

Item	Mean	SD	Level
High levels of individual and group conflicts and violence	4.14	1.09	High
Privacy's lack among social media users' sites	3.74	0.62	Medium
Harassment, scandal, and defamation	3.89	0.79	High
Being at risk for cybercrime	3.93	0.86	High
the increase in sexual misconduct and crime among adolescents	3.99	1.04	High
the growth of extremist and terrorist groups, which influences adolescents' ideas	3.68	0.86	High
Social exclusion	3.91	0.99	High

Lack of confidence when interacting with others	3.66	0.51	Medium
Family breakdown in future	3.80	0.69	Medium
Lack of empathy and sympathy toward others	3.80	0.81	High
Scam and extortion	3.72	0.79	High
Lack of interpersonal skills	3.41	0.77	Medium

As the table demonstrated, the most frequent effect of cyberbullying among adolescents in Jordan is a high level of individual and group conflicts and violence, with a mean value of 4.14, followed by an increase in sexual misconduct and crime ($M=3.99$). Risk for cybercrime ($M=3.93$), social exclusion ($M=3.91$), harassment, scandal, and defamation ($M=3.89$), lack of empathy and sympathy towards others ($M=3.80$), scam and extortion ($M=3.72$), and the growth of extremist and terrorist groups ($M=3.68$) are other identified effects of cyberbullying in the studied community.

TABLE 4: Gender differences and the increased risk of cyberbullying incidences

	Gender			
	Girls		Boys	
	M	SD	M	S. D
Cyberbullying	5.14	2.32	4.03	1.2
Sexting	5.08	2.19	3.99	0.98

Table 4 suggests that the risk of cyberbullying varies on gender as it can be clearly seen that girls are more prone to be the victim of cyberbullying (5.14) and sexting (5.08) incidence as compared to boys ($M= 4.03$ for cyberbullying; and $M=3.99$ for sexting).

TABLE 5: Cyberbullying incidence according to the educational level of adolescents

	1 st grade		2 nd grade		3 rd grade		4 th grade		p-value
	M	SD	M	SD	M	SD	M	SD	
Cyberbullying	3.41	1.17	3.99	0.96	4.09	1.82	4.27	1.99	0.002
Sexting	3.99	0.96	3.76	0.72	4.03	1.27	4.16	1.73	0.001

The participants' educational level was also studied to answer our research question of whether age and educational level resulted in the difference in involvement in cyberbullying incidences. The results indicated that 3rd and 4th grade students are statistically significant for the risks of cyberbullying ($p < 0.002$) and sexting ($p < 0.001$).

4. Discussion

This study aimed to provide an understanding of the effect of online media, cyberbullying, sexting, text messaging, picture/video clip, and e-mail on adolescent's behaviour in Jordan. Cyberbullying weakens cultural identity and interrupts individuals' privacy. The average response from the participants to concerns about the prevalence rate of the most frequent type of cyberbullying among adolescents was high. The findings are consistent with those of research by Khine, et al, (2022)⁴⁴, Hussein, A. (2022)⁴⁵ and Méndez et al, (2022).⁴⁶

Cyberbullying affects both the victim and the community because it threatens and discredits others by utilizing pictures and videos that are against social norms and values, which makes

interpersonal conflict and violence more severe. From the context of the sample participants, the average response to the effects of cyberbullying among adolescents was high. The findings supported those of the studies mentioned by Homran, et al, (2021)⁴⁷ and Reynolds et al. (2018).⁴⁸

In terms of differences based on sex, the research discovered that girls are typically more likely to be victims of cyberbullying risks. In a similar vein, girls had higher mean scores for being the victim of cyberbullying and sexting. This is in line with studies that show similar outcomes for sexting⁴⁸ and cyberbullying,⁴⁹ as well as studies and reviews that show no differences for cyberbullying⁵⁰ and sexting.⁵¹ This is a significant discovery for future prevention and intervention initiatives, which should consider these variances to be more successful. Future study should examine further differences in vulnerability and the use of digital media and their root causes.

In terms of age differences and educational level, the research found that students in the first and second grades scored lower, followed by those in the third and fourth grades. This implies that engagement in these issues rises with age and is also frequently associated with smartphone ownership.⁵¹ These results agree with those from prior study by Yudes-Gómez, et al, (2018)⁴⁹ on cyberbullying. This is crucial to consider when designing future preventative programs for younger adolescents, as some of these risks seem to be more common throughout the later years of education.

This study serves as a strong base for a scholarly investigation into the research paradigm of online cyberbullying, sexting, text messaging, picture/video clip, e-mail, and its effect on adolescent's behaviour. Also, as an answer to the clarion call on the need for studies on online cyberbullying, sexting is generally due to its teething stage significance. It specifically contributes to the empirical studies on the effect of the adoption of online cyberbullying and sexting in Jordan. The significance of this study is also apparent in the desire of the researcher to fill the knowledge gap of empirical Jordanian perspective of the problem and challenges of cyberbullying in Jordan, as it is foreseen that the study has produced good ideas and knowledge that will add to the volume of literature on the global cyberbullying discourse.

There are limitations to this study that may reduce the generalized ability of any conclusions reached. The research examined the nature of participants in a particular area; Jordan. It might be difficult to generalize the study's findings further than the country in which the research was conducted because each society and culture has its own demographic profile and social norms that may influence student behavior regarding internet use.

5. Conclusion

The current study explored the nature of cyberbullying in a sample of Jordanian adolescents. It also addressed the gender differences and educational levels in the involvement of cyberbullying. The results of this study reveal that significant numbers of adolescents are sending or receiving sexually explicit photos. The results also suggested that prevalence rates are high in four main categories of cyberbullying. Also, as we assumed, there is a difference in gender and educational

level as females are subjected to more incidences of cyberbullying, and 4th grades students have a more significant value of cyberbullying involvement.

Based on the results, the following conclusion can be drawn;

- It is essential to activate the role of the media and education systems in training youths about the risks of cyberbullying to improve adolescent feelings about the value of treating others well and engaging in objective cultural dialogue with them, as well as the strategies for avoiding it.
- Pursuing additional applied research to examine the problem of cyberbullying and determine its consequences on the community level.

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WORKS CITED

- Palfrey J, Gasser U. Born Digital: Understanding the First Generation of Digital Natives. ReadHowYouWant.com; 2011.
- Nguyen TT. Multimedia juvenile victimization: Helping teachers understand youth behavior. In: Society for Information Technology & Teacher Education International Conference. Association for the Advancement of Computing in Education (AACE); 2010:3171-3174.
- Craig W, Boniel-Nissim M, King N, et al. Social media use and cyber-bullying: A cross-national analysis of young people in 42 countries. *J Adolesc Heal*. 2020;66(6):S100-S108.
- Ahmad Y. A. Bani Ahmad, "Firm Determinants that Influences Implementation of Accounting Technologies in Business Organizations," *WSEAS Transactions on Business and Economics*, vol. 21, pp. 1-11, 2024
- Ahmad, A. Y. B., Kumari, D. K., Shukla, A., Deepak, A., Chandnani, M., Pundir, S., & Shrivastava, A. (2024). Framework for Cloud Based Document Management System with Institutional Schema of Database. *International Journal of Intelligent Systems and Applications in Engineering*, 12(3s), 672-678.
- Ahmad, A. Y. B., Tiwari, A., Nayeem, M. A., Biswal, B. K., Satapathy, D. P., Kulshreshtha, K., & Bordoloi, D. (2024). Artificial Intelligence Perspective Framework of the Smart Finance and Accounting Management Model. *International Journal of Intelligent Systems and Applications in Engineering*, 12(4s), 586-594.
- Ahmad, A., Abusaimeh, H., Rababah, A., Alqsass, M., Al-Olima, N., & Hamdan, M. (2024). Assessment of effects in advances of accounting technologies on quality financial reports in Jordanian public sector. *Uncertain Suppl*
- David-Ferdon C, Hertz MF. Electronic media and youth violence: A CDC issue brief for researchers. Published online 2009.
- Liebengood FD, Nguyen TT. Adult and adolescent sexting: Epidemic or exaggeration. In: Proceedings of the 34th Annual Conference of the Hawaii Educational Research Association, Honolulu, HI. ; 2012.
- Dake JA, Price JH, Maziarz L, Ward B. Prevalence and correlates of sexting behavior in adolescents. *Am J Sex Educ*. 2012;7(1):1-15.

- Van Ouytsel J, Ponnet K, Walrave M, d'Haenens L. Adolescent sexting from a social learning perspective. *Telemat Informatics*. 2017;34(1):287-298.
- Valkenburg PM, Peter J. Online communication among adolescents: An integrated model of its attraction, opportunities, and risks. *J Adolesc Heal*. 2011;48(2):121-127.
- Tokunaga RS. Following you home from school: A critical review and synthesis of research on cyberbullying victimization. *Comput Human Behav*. 2010;26(3):277-287.
- Koletić G, Kohut T, Štulhofer A. Associations between adolescents' use of sexually explicit material and risky sexual behavior: A longitudinal assessment. *PLoS One*. 2019;14(6):e0218962.
- Yu C, Kågesten AE, De Meyer S, Moreau C, van Reeuwijk M, Lou C. Pornography use and perceived gender norms among young adolescents in urban poor environments: a cross-site study. *J Adolesc Heal*. 2021;69(1):S31-S38.
- Shallo SA, Mengesha WW. Exposure to sexually explicit materials and its association with sexual behaviors of Ambo University undergraduate students, 2018. *Ethiop J Health Sci*. 2019;29(4).
- Donlin M. You Mean We Gotta Teach That, Too? In: *Cyberbullying Prevention and Response*. Routledge; 2012:110-127.
- Ybarra ML, Mitchell KJ. Youth engaging in online harassment: Associations with caregiver-child relationships, Internet use, and personal characteristics. *J Adolesc*. 2004;27(3):319-336.
- Insights GD. Internet use in Jordan in 2022. Published 2022. [https://datareportal.com/reports/digital-2022-jordan#:~:text=There were 6.87 million internet,percent\) between 2021 and 2022](https://datareportal.com/reports/digital-2022-jordan#:~:text=There were 6.87 million internet,percent) between 2021 and 2022).
- Caldwell AL. An Exploration of Young Adult Online Behavior Versus Their Face-to-Face Interactions. Published online 2013.
- Yudes-Gómez C, Baridon-Chauvie D, González-Cabrera JM. Un estudio transcultural Cyberbullying and problematic Internet use in Colombia, Uruguay and Spain: Cross-cultural study. *Comun Rev Cientifica Comun y Educ*. 2018;26(56):49-58.
- Van Ouytsel J, Ponnet K, Walrave M. Cyber dating abuse victimization among secondary school students from a lifestyle-routine activities theory perspective. *J Interpers Violence*. 2018;33(17):2767-2776.
- Zweig JM, Dank M, Yahner J, Lachman P. The rate of cyber dating abuse among teens and how it relates to other forms of teen dating violence. *J Youth Adolesc*. 2013;42(7):1063-1077.
- Alhawamdeh, H., Al-Saad, S. A., Almasarweh, M. S., Al-Hamad, A. A.-S. A., Bani Ahmad, A. Y. A. B., & Ayasrah, F. T. M. (2023). The Role of Energy Management Practices in Sustainable Tourism Development: A Case Study of Jerash, Jordan. *International Journal of Energy Economics and Policy*, 13(6), 321-333. <https://doi.org/10.32479/ijeeep.14724>
- Allahham, M., & Ahmad, A. (2024). AI-induced anxiety in the assessment of factors influencing the adoption of mobile payment services in supply chain firms: A mental accounting perspective. *International Journal of Data and Network Science*, 8(1), 505-514.
- Cheng, Congbin, Sayed Fayaz Ahmad, Muhammad Irshad, Ghadeer Alsanie, Yasser Khan, Ahmad Y. A. Bani Ahmad (Ayassrah), and Abdu Rahman Aleemi. 2023. "Impact of Green Process Innovation and Productivity on Sustainability: The Moderating Role of Environmental Awareness" *Sustainability* 15, no. 17: 12945. <https://doi.org/10.3390/su151712945>
- Daoud, M., Taha, S., Al-Qeod, M., Alsafadi, Y., Ahmad, A., & Allahham, M. (2024). EcoConnect: Guiding environmental awareness via digital marketing approaches. *International Journal of Data and Network Science*, 8(1), 235-242.
- Fraihat, B. A. M., Ahmad, A. Y. B., Alaa, A. A., Alhawamdeh, A. M., Soumadi, M. M., Aln'emi, E. A. S., & Alkhawaldeh, B. Y. S. (2023). Evaluating Technology Improvement in Sustainable Development Goals by Analysing Financial Development and Energy Consumption in Jordan. *International Journal of Energy Economics and Policy*, 13(4), 348
- Lin, C., Ahmad, S. F., Ayassrah, A. Y. B. A., Irshad, M., Telba, A. A., Awwad, E. M., & Majid, M. I. (2023). Green production and green technology for sustainability: The mediating role of waste reduction and energy use. *Heliyon*, e22496.
- K. Daoud, D. . Alqudah, M. . Al-Qeod, B. A. . Al Qaied, and A. Y. A. B. . Ahmad, "The Relationship Between Mobile Marketing and Customer Perceptions in Jordanian Commercial Banks: The Electronic Quality as A Mediator Variable", *ijmst*, vol. 10, no. 2, 2718-2729. Retrieved from <https://kurdishstudies.net/menu-script/index.php/KS/article/view/831>

- Peiran Liang, Yulu Guo, Sohaib Tahir Chauhdary, Manoj Kumar Agrawal, Sayed Fayaz Ahmad, Ahmad Yahiya Ahmad Bani Ahmad, Ahmad A. Ifseisi, Tiancheng Ji, 2024, "Sustainable development and multi-aspect analysis of a novel polygeneration system using biogas upgrading and LNG regasification processes, producing power, heating, fresh water and liquid CO₂," *Process Safety and Environmental Protection*,
- Peiran Liang, Yulu Guo, Tirumala Uday Kumar Nutakki, Manoj Kumar Agrawal, Taseer Muhammad, Sayed Fayaz Ahmad, Ahmad Yahiya Ahmad Bani Ahmad, Muxing Qin, 2024. "Comprehensive assessment and sustainability improvement of a natural gas power plant utilizing an environmentally friendly combined cooling heating and power-desalination arrangement", *Journal of Cleaner Production*, Volume 436,, 140387,
- Rumman, G., Alkhazali, A., Barnat, S., Alzoubi, S., AlZagheer, H., Dalbough, M., ... & Darawsheh, S. (2024). The contemporary management accounting practices adoption in the public industry: Evidence from Jordan. *International Journal of Data and Network Science*, 8(2), 1237-1246.
- William, P., Ahmad, A. Y. B., Deepak, A., Gupta, R., Bajaj, K. K., & Deshmukh, R. (2024). Sustainable Implementation of Artificial Intelligence Based Decision Support System for Irrigation Projects in the Development of Rural Settlements. *International Journal of Intelligent Systems and Applications in Engineering*, 12(3s), 48-56.
- Yahiya Ahmad Bani Ahmad (Ayassrah), Ahmad; Ahmad Mahmoud Bani Atta, Anas; Ali Alawawdeh, Hanan; Abdallah Aljundi, Nawaf; Morshed, Amer; and Amin Dahbour, Saleh (2023) "The Effect of System Quality and User Quality of Information Technology on Internal Audit Effectiveness in Jordan, And the Moderating Effect of Management Support," *Applied Mathematics & Information Sciences*: Vol. 17: Iss. 5, Article 12.
- DOI: <https://dx.doi.org/10.18576/amis/170512>
- Zhan, Y., Ahmad, S. F., Irshad, M., Al-Razgan, M., Awwad, E. M., Ali, Y. A., & Ayassrah, A. Y. B. A. (2024). Investigating the role of Cybersecurity's perceived threats in the adoption of health information systems. *Heliyon*, 10(1).
- Quesada S, Fernández-González L, Calvete E. EL SEXTEO (SEXTING) EN LA ADOLESCENCIA: FRECUENCIA Y ASOCIACIÓN CON LA VICTIMIZACIÓN DE CIBERACOSO Y VIOLENCIA EN EL NOVIAGZO. *Behav Psychol Conduct*. 2018;26(2).
- Temple JR. 50.3 THE CO-OCCURRENCE OF SEXTING AND CYBER DATING ABUSE. *J Am Acad Child Adolesc Psychiatry*. 2016;10(55):S339.
- De Santisteban P, Gámez-Guadix M. Prevalence and risk factors among minors for online sexual solicitations and interactions with adults. *J Sex Res*. 2018;55(7):939-950.
- Limber SP, Small MA. State laws and policies to address bullying in schools. *School Psych Rev*. 2003;32(3):445-455.
- Olweus D. Aggression in the Schools: Bullies and Whipping Boys. *Hemisphere*; 1978.
- Olweus D. Bullying at school: basic facts and effects of a school based intervention program. *J child Psychol psychiatry*. 1994;35(7):1171-1190.
- Tr N. Overpeck M., Pilla RS, Ruan WJ Simons-Morton B, Scheidt P. Bullying behaviors among US youth. *JAMA*. 2001;285:2021-2094.
- Hanewald R. Confronting the pedagogical challenge of cyber safety. *Aust J Teach Educ*. 2008;33(3):1-16.
- Mishna F, Scarcello I, Pepler D, Wiener J. Teachers' understanding of bullying. *Can J Educ Can l'éducation*. Published online 2005:718-738.
- Willard N. Cyberbullying guidance for school leaders. *Cent Safe Responsible Internet Use*. Published online 2005.
- O'Moore M. A Guiding Framework for Policy Approaches to School Bullying & Violence. In: *A Report from the Conference 'Taking Fear Out of Schools.* ; 2005:38-51.
- Henson B. Bullying beyond the schoolyard: Preventing and responding to cyberbullying. Published online 2012.
- Chin MA. Prevalence, Gender Differences, and Mental Health Problems Associated with Traditional and Cyber Bullying. *University of Hawai'i at Hilo*; 2011.
- Chang F, Lee C, Chiu C, Hsi W, Huang T, Pan Y. Relationships among cyberbullying, school bullying, and mental health in Taiwanese adolescents. *J Sch Health*. 2013;83(6):454-462.
- Bonanno RA, Hymel S. Cyber bullying and internalizing difficulties: Above and beyond the impact of traditional forms of bullying. *J Youth Adolesc*. 2013;42:685-697.

- Hinduja S, Patchin JW. Social influences on cyberbullying behaviors among middle and high school students. *J Youth Adolesc.* 2013;42:711-722.
- News. C. Report Urges Cyberbullying Law After Rehtaeh Parsons Death. Accessed July 19, 2013. Published 2013. <https://www.cbc.ca/news/politics/report-urges-cyberbullying-law-after-rehtaeh-parsons-death-1.1323940>
- Ybarra ML, Mitchell KJ, Wolak J, Finkelhor D. Examining characteristics and associated distress related to Internet harassment: findings from the Second Youth Internet Safety Survey. *Pediatrics.* 2006;118(4):e1169-e1177.
- Mustafa R, Hussein RF. SMS Code-Switching among Teenagers in Jordan. Middle East University; 2011.
- Shaheen A, Nassar O, Saleh M. Understanding of school related factors associated with emotional health and bullying behavior among Jordanian adolescents. *Iran J Public Health.* 2014;43(11):1528.
- Al-Bitar ZB, Al-Omari IK, Sonbol HN, Al-Ahmad HT, Cunningham SJ. Bullying among Jordanian schoolchildren, its effects on school performance, and the contribution of general physical and dentofacial features. *Am J Orthod Dentofac Orthop.* 2013;144(6):872-878.
- Vieno A, Gini G, Santinello M. Different forms of bullying and their association to smoking and drinking behavior in Italian adolescents. *J Sch Health.* 2011;81(7):393-399.
- Weiss JW, Mouttapa M, Cen S, Johnson CA, Unger J. Longitudinal effects of hostility, depression, and bullying on adolescent smoking initiation. *J Adolesc Heal.* 2011;48(6):591-596.
- Niemelä S, Brunstein-Klomek A, Sillanmäki L, et al. Childhood bullying behaviors at age eight and substance use at age 18 among males. A nationwide prospective study. *Addict Behav.* 2011;36(3):256-260.
- Khine AT, Saw YM, Htut ZY, et al. Assessing risk factors and impact of cyberbullying victimization among university students in Myanmar: A cross-sectional study. *PLoS One.* 2020;15(1):e0227051.
- Hussein A. Cyberbullying through social media And its relationship to achievement motivation among adolescent students. *Int J Instr Technol Educ Stud.* 2022;3(3):1-10.
- Méndez I, Jorquera Hernández AB, Ruiz-Esteban C. Profiles of mobile phone problem use in Bullying and Cyberbullying among adolescents. *Front Psychol.* 2020;11:596961.
- Al Homran M, Al-Swalha A, Al-Aweemer Y. Role of social media in spreading the culture of extremism. *Dirasat, Hum Soc Sci.* 2021;48(3).
- Reynolds C. Digital Hiatus: Symbolic violence in an online social learning network for master's level students at a UK University. Published online 2018.
- Yudes-Gómez C, Baridon-Chauvie D, González-Cabrera JM. Ciberacoso y uso problemático de Internet en Colombia, Uruguay y España: Un estudio transcultural= Cyberbullying and problematic Internet use in Colombia, Uruguay and Spain: Cross-cultural study. *Ciberacoso y uso Probl Internet en Colomb Uruguay y España Un Estud Transcult Cyberbullying Probl Internet use Colomb Uruguay Spain Cross-cultural study.* Published online 2018:49-58.
- Navarro R. Gender issues and cyberbullying in children and adolescents: From gender differences to gender identity measures. *Cyberbullying across globe Gender, Fam Ment Heal.* Published online 2016:35-61.
- Madigan S, Ly A, Rash CL, Van Ouytsel J, Temple JR. Prevalence of multiple forms of sexting behavior among youth: A systematic review and meta-analysis. *JAMA Pediatr.* 2018;172(4):327-335.