Proceeding Paper

The Relationship between Cyberbullying Training Experience, Gender, and Depression among the Malaysian Adolescents during the COVID-19 Pandemic [†]

Khong Yun Pang [ID], Wen Li Ku, Jaclyn Hui Jie Teng, Ren Wen Lew and Pei Boon Ooi *[ID]

School of Medical and Life Sciences, Sunway University, 5, Jalan Universiti, Bandar Sunway,
Petaling Jaya 47500, Selangor, Malaysia
* Correspondence: peiboono@sunway.edu.my
† Presented at the International Academic Symposium of Social Science 2022, Kota Bharu, Malaysia, 3 July 2022.

Abstract: The introduction of the online educational system during the COVID-19 pandemic has increased the vulnerability to cyberbullying incidents among adolescents. This study examined the relationship between cyberbullying training and depression among Malaysian adolescents during the COVID-19 pandemic. A total of 1356 Malaysian adolescents participated in the online survey. Results revealed that depression was significantly associated with cyberbullying training. This study concluded that cyberbullying training can protect individuals from depression caused by cyberbullying. Female adolescents were found more vulnerable to depression than males during the COVID-19 pandemic. Therefore, we advocate that cyberbullying training is essential to be enforced in the current Malaysian schools' curriculum.

Keywords: cyberbullying; depression; cyberbullying training; cross-sectional study

1. Introduction

The evolution of technology has created an artificial online world which makes information dissemination and communication convenient and easily accessible. As a result, the Internet has dominated the lives of modern people, especially adolescents [1]. The imposed Movement Control Operation (MCO) rules have made physical interaction difficult, while it has gradually been replaced by online interaction through the existing social networking sites (SNSs) such as WhatsApp, Facebook, Twitter, etc, [2,3]. Hinduja and Patchin [4] identified that Internet deviant behaviors were prevalent among adolescents and directly influenced the well-being of the online population. Accordingly, cyberbullying has risen as an imminent issue amid intensive Internet use [5]. Smith [6] defined cyberbullying as a series of acts that involve the cyber-perpetrators constantly inflicting harm and aggressiveness towards the victim through electronic-assisted technology. Many studies found that there was a growth in cyberbullying cases during the COVID-19 pandemic [7–9]. Wang et al. [10] found that individuals were at a greater risk of being cyberbullied during this pandemic, which can lead to hopelessness and loneliness, which are risk factors for depression. To highlight, Hase et al. [11] and Wright [12] found an association between cyberbullying and depression, while Limone and Toto [13] saw the impact of intensive Internet use during COVID-19, causing depression.

Many cyberbullying interventions and trainings have been designed to prevent cyberbullying perpetration and to countermeasure the negative impact of cyberbullying, for instance, The Media Heroes program [14], Surf-fair [15], Conrad [16], Noncadiamoin-trappola [17], The Kiva Program [18], and Help-Assert Yourself-Humor-Avoid-Self-Talk-Own [19]. Malaysia also previously launched a cyberbullying campaign (Nethics) which aimed to educate online users on social etiquette on the Internet and prevention strategies for cyberbullying [20]. Gaffney et al. [21] conducted a meta-analysis on 24 cyberbullying

interventions and concluded that the current programs showed effectiveness in preventing cyberbullying; typically, they can reduce cyberbullying victimization. These interventional training can help individuals to be prepared encountering cyberbullying issues. In this study, the cyberbullying training experience refers to any of the interventional-based cyberbullying training that had been experienced by the participants which including the school-based cyberbullying training, corporate-based cyberbullying training, online-based cyberbullying training, and especially those mentioned above. Anticipating the growing trend of cyberbullying intervention studies in the future, the research hypotheses were shown below:

1. There was a significant association between the cyberbullying training experience and the likelihood of individuals helping a friend who had been cyberbullied.
2. There was a significant association between cyberbullying training experience and depression.
3. There was a significant association between gender and depression.

2. Methodology

This study received ethical approval from the Sunway Ethics Review Board (SUREC 2018/018). The data collected in this study was part of the overall data collection via a survey initiated by a Malaysian telecom corporate. This survey was launched in Survey Monkey and the participants were recruited through convenience sampling. In this study, we had strictly set the criteria to include only the participants aged 13 to 18 years old, who were also Malaysian and able to provide informed consent. To comply with the rights of the participants, they were briefed through using the online written information sheets and were also required to provide their informed consent on the same webpage before answering the survey. Besides, we had put all questions as compulsory to answer in the survey to address the missing value problem, but the participants were advised to withdraw from the study voluntarily if they were reluctant to answer any of the questions provided.

This questionnaire was made up of the dichotomous scales developed jointly by the telecom corporate and the cyberbullying experts. The questions were designed to understand the cyberbullying experience, cyberbullying training experience, adolescents' habits of assessing the Internet, etc. In addition, the subscale of "Depression" of the Depression, Anxiety, and Stress Scale (DASS-21) [22] was included in the questionnaire to assess the level of depression of the participants. It was made up of a total of 7 items and the scoring of the scale was calculated such that the addition of the 7 items was multiplied by 2. We followed the cut-off score determined originally, as follows: scores of 0 to 9 were indicated as having no depression, a score of 10–13 indicated mild depression, a score of 14 to 20 indicated moderate depression, scores of 21 to 27 indicated severe depression, and scores of 28 and above indicated extremely severe depression.

We used SPSS (Statistical Package for the Social Sciences Version 26, IBM, Armonk, NY, USA) [23] to perform the data analysis in this study. To highlight, a crosstab analysis was used to investigate the significant difference between individuals who had received cyberbullying training previously, and the likeliness of individuals to help a friend who had been cyberbullied. The binary logistic regression was used to measure the relationship between depression in individuals who had received cyberbullying training previously, and gender.

3. Results

3.1. Descriptive Statistics

There was a total of 1356 participants who took part in this study. The mean, standard deviation, skewness, and kurtosis of the variables were shown in Table 1. Table 2 showed the demographics of the participants. Of the participants, 57.2% were male, and 58% of them were individuals aged between 13 and 15 years old, compared to those aged between 16 and 18 years old, while Chinese people made up the majority of the participants (58.7%). Additionally, only 4.5% of the participants reported having experienced cyberbullying

in the last 3 months, 44.0% of them reported having underwent a cyberbullying training previously, and 51% of them had displayed at least a mild level of depression.

Table 1. The descriptive statistics information.

Variables	Mean	Std. Deviation	Skewness	Kurtosis
Depression	10.92	10.127	0.775	<0.000

Table 2. Demographics (*n* = 1356).

Variables	Frequency (*n*)	Percentage (%)
Gender		
Male	776	57.2
Female	580	42.8
Age		
13-15 years old	786	58.0
16-18 years old	570	42.0
Race		
Malay	337	24.9
Chinese	796	58.7
Indians	200	14.7
Others	23	1.7
Cyberbullying experience		
Yes	61	4.5
No	1121	82.7
Prefer not to say	174	12.8
Previously had been receiving cyberbullying training		
Yes	609	44.0
No	747	55.1
Depression score		
Absent	665	49.0
Mild	96	7.1
Moderate	358	26.4
Severe	131	9.7
Extremely severe	106	7.8

3.2. Hypotheses Testing

In Table 3, we found that there was an association between individuals who had previously received cyberbullying training and the likeliness of individuals to help a friend who had been cyberbullied (X^2 = 63.559, *p*-value < 0.000). To highlight, people who had received cyberbullying training were more "Very likely" to help a friend who had been cyberbullied (70.4%) compared to their counterparts (51.8%). Similarly, individuals who had not undergone cyberbullying training were more reluctant to help (e.g., "Not likely at all" (4.4%), "Not very likely" (11.2%)).

We excluded those participants who had self-reported not experiencing cyberbullying in the last 3 months, and only 235 participants were included in the logistic regression analysis. The results in Table 4 showed that depression was significantly associated with the female gender (*OR* = 2.117, *C.I.* = 1.084, 4.133) and participants who had previously been receiving cyberbullying training (*OR* = 0.453, *C.I.* = 0.239, 0.859).

Table 3. Chi-square test (*n* = 1356).

Variables	Previously Had Received Cyberbullying Training		
	No (%)	Yes (%)	Total
How likely would you help a friend who had been cyberbullied			
Not likely at all	33 (4.4)	7 (1.1)	40
Not very likely	84 (11.2)	25 (4.1)	109
I don't know	205 (27.4)	134 (22.0)	339
Somewhat likely	38 (5.1)	14 (2.3)	52
Very likely	387 (51.8)	429 (70.4)	816
Total	747	609	1356
Pearson Chi-square	63.559		
Degree of freedom	4		
p-value	<0.000		

Table 4. Logistic regression (*n* = 235).

Variable	Depression		Nagelkerke R Square
	OR	*95% C.I.*	
Gender			0.067
Male (Ref)	-	-	
Female	2.117 *	(1.084, 4.133)	
Previously receiving cyberbullying training			
No (Ref)	-	-	
Yes	0.453 *	(0.239, 0.859)	

* $p < 0.05$.

4. Discussion

The result showed that there was a significant association between individuals who had previously received cyberbullying training and the likelihood of individuals helping a friend who had been cyberbullied. Liu et al. [24] found that cyberbullying bystanders will help the cyber-victims based on their perception of the critical level of the cyberbullying situation and the urgency of helping the cyber-victims. Those who had undergone the cyberbullying training were more aware of the negative outcomes of cyberbullying and thus were more likely to see cyberbullying more importantly compared to those who were without the cyberbullying training experience. Additionally, empathy was generally found to be a crucial factor that pushes a bystander to help a victim [25–27]. Hence, most of the cyberbullying interventions were tailor made to boost individuals' empathy levels and equipped them with prevention strategies and healthy coping mechanisms [28]. To highlight, The Media Heroes Project [14] reinforced the empathy and perspective-taking of individuals to approach a potential cyberbullying case. According to the empathy–altruism hypothesis [29], people were more likely to help those for whom they felt empathy. There-fore, the trained "empathy" in the cyberbullying program could encourage individuals to help those who encountered the cyberbullying perpetration.

Our findings showed that females were at a higher risk than males of developing depression. It was consistent with previous studies [30,31]. Kuehner [32] explained that it might be caused by the artefact hypotheses and the biological, psychological, and environmental differences. Artefact hypotheses implied that males were less likely to recognize depression than females, while Eid et al. [33] suggested that females were more vulnerable to mental disorders due to their differential body response to stressors compared to males. Concerning the psychological component, Costa et al. [34] found that females were more susceptible to neuroticism compared to males, which appeared to be a potential risk factor

for depression despite the mixed findings in the literature [35,36]. Hankin et al. [37] also found that female adolescents will face more interpersonal environmental stresses such as peer chronic stress compared to male adolescents, which makes them more vulnerable to depression.

We found that individuals who had undergone previous cyberbullying training will be less likely to develop depression compared to their counterparts. This finding was consistent with the literature which stated that cyberbullying intervention can prevent cyber-victimization [21]. The learning outcomes from the cyberbullying training act as a protective factor that help to shield them from the negative psychological influences. Cyberbullying-trained individuals were generally well-versed in cyberbullying issues, while most of them were taught scientific coping strategies against cyberbullying perpetration [28]. As a result, cyberbullying training helped individuals properly cope with the psychological impact of cyberbullying perpetration such as depression.

Implications

The present study showed that cyberbullying training can be a crucial component shielding individuals from the negative psychological impacts derived from the cyberbullying perpetration. Besides, individuals who had undergone cyberbullying trainings were more likely to help their peers who were encountering cyberbullying issues. Therefore, it is important for the policy makers to enforce the cyberbullying training and intervention into the schools' curriculum. We envisioned that the exposure of cyberbullying training towards adolescents can be extremely beneficial for them to face the ever common occurrence of the cyberbullying cases, while better equipping them with the competent skills to deal with the cyberbullying perpetration and victimization.

This study had also revealed that female adolescents were more vulnerable to the negative impact of cyberbullying. Therefore, it was important for parents and teachers to pay a greater attention on the well-being of the female adolescents while providing them with care and empathy, noticing any symptoms of depression.

5. Conclusions

This study found that many individuals were experiencing at least a mild level of depression despite most of them not experiencing cyberbullying in the last 3 months. The findings suggested that cyberbullying training was a protective factor to prevent individuals from experiencing depression that was caused by cyberbullying perpetration and victimization. This was aided by the coping skills that had been taught in most of the cyberbullying intervention programs. Additionally, people who had previous cyberbullying training experience displayed a higher level of willingness to help a friend who was facing a cyberbullying issue. As they were coming in with greater awareness of the cyberbullying issue, their empathy level to offer help was strengthened. We also found that female adolescents were at a greater risk of developing depression compared to male adolescents. Therefore, more attention should be given to them during this difficult period amid the pandemic.

References

1. López-Bueno, R.; López-Sánchez, G.F.; Casajús, J.A.; Calatayud, J.; Tully, M.A.; Smith, L. Potential health-related behaviors for pre-school and school-aged children during COVID-19 lockdown: A narrative review. *Prev. Med.* **2021**, *143*, 106349. [CrossRef] [PubMed]
2. Hussain, W. Role of social media in COVID-19 pandemic. *Int. J. Front. Sci.* **2020**, *4*, 59–60. [CrossRef]
3. Nguyen, L.H.; Drew, D.A.; Graham, M.S.; Joshi, A.D.; Guo, C.-G.; Ma, W.; Mehta, R.S.; Warner, E.T.; Sikavi, D.R.; Lo, C.-H.; et al. Risk of COVID-19 among front-line health-care workers and the general community: A prospective cohort study. *Lancet Public Health* **2020**, *5*, e475–e483. [CrossRef]
4. Hinduja, S.; Patchin, J.W. Bullying, cyberbullying, and suicide. *Arch. Suicide Res.* **2010**, *14*, 206–221. [CrossRef]
5. Chan, N.; Ahrumugam, P.; Scheithauer, H.; Schultze-Krumbholz, A.; Ooi, P.B. A hermeneutic phenomenological study of students' and school counsellors' "lived experiences" of cyberbullying and bullying. *Comput. Educ.* **2020**, *146*, 103755. [CrossRef]
6. Smith, P.K. School bullying. *Sociol. Probl. E Práticas* **2013**, *71*, 81–98. [CrossRef]
7. Alsawalqa, R.O. Cyberbullying, social stigma, and self-esteem: The impact of COVID-19 on students from East and Southeast Asia at the University of Jordan. *Heliyon* **2021**, *7*, e06711. [CrossRef]
8. Fore, H.H. Violence against children in the time of COVID-19: What we have learned, what remains unknown and the opportunities that lie ahead. *Child Abus. Negl.* **2021**, *116*, 104776. [CrossRef] [PubMed]
9. Han, Z.; Wang, Z.; Li, Y. Cyberbullying involvement, resilient coping, and loneliness of adolescents during COVID-19 in rural China. *Front. Psychol.* **2021**, *12*, 664612. [CrossRef]
10. Wang, W.; Xie, X.; Wang, X.; Lei, L.; Hu, Q.; Jiang, S. Cyberbullying and depression among chinese college students: A moderated mediation model of social anxiety and neuroticism. *J. Affect. Disord.* **2019**, *256*, 54–61. [CrossRef]
11. Hase, C.N.; Goldberg, S.B.; Smith, D.; Stuck, A.; Campain, J. Impacts of traditional bullying and cyberbullying on the mental health of the middle school and high school students. *Psychol. Sch.* **2015**, *52*, 607–617. [CrossRef]
12. Wright, M.; Wachs, S.; Harper, B. The moderation of empathy in the longitudinal association between witnessing cyberbullying, depression, and anxiety. *Cyberpsychology: J. Psychosoc. Res. Cyberspace* **2018**, *12*, 6. [CrossRef]
13. Limone, P.; Toto, G.A. Psychological and emotional effects of digital technology on children in COVID-19 pandemic. *Brain Sci.* **2021**, *11*, 1126. [CrossRef] [PubMed]
14. Schultze-Krumbholz, A.; Zagorscak, P.; Scheithauer, H. 11—A school-based cyberbullying preventive intervention approach: The Media Heroes program *. In *Reducing Cyberbullying in Schools*; Campbell, M., Bauman, S., Eds.; Academic Press: Cambridge, MA, USA, 2018; pp. 145–158.
15. Pieschl, S.; Urbasik, S. Does the cyber bullying prevention program surf-fair work? An evaluation study. In *From Cyber Bullying to Cyber Safety: Issues and Approaches in Educational Contexts*; Hanewald, R., Ed.; Nova Science Publishers: Hauppauge, NY, USA, 2013; pp. 205–224.
16. Ortega Ruiz, R.; Rey Alamillo, R.D.; Casas Bolaños, J.A. Knowing, building and living together on internet and social networks: The ConRed cyberbullying prevention program. *Int. J. Confl. Violence* **2012**, *6*, 302–312. [CrossRef]
17. Palladino, B.E.; Nocentini, A.; Menesini, E. Evidence-based intervention against bullying and cyberbullying: Evaluation of the NoTrap! program in two independent trials. *Aggress. Behav.* **2016**, *42*, 194–206. [CrossRef]
18. Salmivalli, C.; Kärnä, A.; Poskiparta, E. Counteracting bullying in Finland: The KiVa program and its effects on different forms of being bullied. *Int. J. Behav. Dev.* **2011**, *35*, 405–411. [CrossRef]
19. Salvatore, A.J. An Anti-Bullying Strategy: Action Research in a 5/6 Intermediate School. Ph.D. Thesis, University of Hartford, West Hartford, CT, USA, 2006.
20. Malaysia Is 2nd in Asia for Youth Cyberbullying 2022. Available online: https://www.thestar.com.my/news/nation/2022/01/14/malaysia-is-2nd-in-asia-for-youth-cyberbullying (accessed on 18 May 2022).
21. Gaffney, H.; Farrington, D.P.; Espelage, D.L.; Ttofi, M.M. Are cyberbullying intervention and prevention programs effective? A systematic and meta-analytical review. *Aggress. Violent Behav.* **2019**, *45*, 134–153. [CrossRef]
22. Lovibond, P.F.; Lovibond, S.H. The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the beck depression and anxiety inventories. *Behav. Res. Ther.* **1995**, *33*, 335–343. [CrossRef]
23. IBM Corp. *IBM SPSS Statistics for Windows, Version 26.0*; IBM Corp.: Armonk, NY, USA, 2019.
24. Liu, C.-H.; Yin, X.-R.; Huang, P.-S. Cyberbullying: Effect of emergency perception on the helping tendencies of bystanders. *Telemat. Inform.* **2021**, *62*, 101627. [CrossRef]

25. Haddock, A.D.; Jimerson, S.R. An examination of differences in moral disengagement and empathy among bullying participant groups. *J. Relatsh. Res.* **2017**, *8*, e15. [CrossRef]

26. Lambe, L.J.; Cioppa, V.D.; Hong, I.K.; Craig, W.M. Standing up to bullying: A social ecological review of peer defending in offline and online contexts. *Aggress. Violent Behav.* **2019**, *45*, 51–74. [CrossRef]

27. Zych, I.; Ttofi, M.M.; Farrington, D.P. Empathy and callous–unemotional traits in different bullying roles: A systematic review and meta-analysis. *Trauma Violence Abus.* **2016**, *20*, 3–21. [CrossRef] [PubMed]

28. Hutson, E.; Kelly, S.; Militello, L.K. Systematic review of cyberbullying interventions for youth and parents with implications for evidence-based practice. *Worldviews Evid. Based Nurs.* **2018**, *15*, 72–79. [CrossRef] [PubMed]

29. Toi, M.; Batson, C.D. More evidence that empathy is a source of altruistic motivation. *J. Personal. Soc. Psychol.* **1982**, *43*, 281–292. [CrossRef]

30. Marzo, R.R.; Vinay, V.; Bahari, R.; Chauhan, S.; Ming, D.A.F.; Fernandez, S.F.A.N.; Johnson, C.C.P.; Thivakaran, A.Q.A.; Rahman, M.M.; Goel, S. Depression and anxiety in Malaysian population during third wave of the COVID-19 pandemic. *Clin. Epidemiol. Glob. Heal.* **2021**, *12*, 100868. [CrossRef]

31. Xiong, J.; Lipsitz, O.; Nasri, F.; Lui, L.M.W.; Gill, H.; Phan, L.; Chen-Li, D.; Iacobucci, M.; Ho, R.; Majeed, A.; et al. Impact of COVID-19 pandemic on mental health in the general population: A systematic review. *J. Affect. Disord.* **2020**, *277*, 55–64. [CrossRef]

32. Kuehner, C. Why is depression more common among women than among men? *Lancet Psychiatry* **2017**, *4*, 146–158. [CrossRef]

33. Eid, R.S.; Gobinath, A.R.; Galea, L.A.M. Sex differences in depression: Insights from clinical and preclinical studies. *Prog. Neurobiol.* **2019**, *176*, 86–102. [CrossRef]

34. Costa, P.T.; Terracciano, A.; McCrae, R.R. Gender differences in personality traits across cultures: Robust and surprising findings. *J. Pers. Soc. Psychol.* **2001**, *81*, 322–331. [CrossRef]

35. Hakulinen, C.; Elovainio, M.; Pulkki-Råback, L.; Virtanen, M.; Kivimäki, M.; Jokela, M. Personality and depressive symptoms: Individual participation meta-analysis of 10 Cohort Studies. *Depress. Anxiety* **2015**, *32*, 461–470. [CrossRef]

36. Kendler, K.S.; Gardner, C.O. Sex differences in the pathways to major depression: A Study of opposite-sex twin pairs. *Am. J. Psychiatry* **2014**, *171*, 426–435. [CrossRef] [PubMed]

37. Hankin, B.L.; Young, J.F.; Abela, J.R.Z.; Smolen, A.; Jenness, J.L.; Gulley, L.D.; Technow, J.R.; Gottlieb, A.B.; Cohen, J.R.; Oppenheimer, C.W. Depression from childhood into late adolescence: Influence of gender, development, genetic susceptibility, and peer stress. *J. Abnorm. Psychol.* **2015**, *124*, 803–816. [CrossRef] [PubMed]