CYBERVICTIMIZATION AND DEPRESSION AMONG MALAYSIAN ADOLESCENTS: SENSE OF COHERENCE AS A MODERATOR

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**CYBERVICTIMIZATION AND DEPRESSION AMONG MALAYSIAN
ADOLESCENTS: SENSE OF COHERENCE AS A MODERATOR**

By

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ABSTRACT

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Tee Xiang Yi

Adolescents are increasingly using electronic devices, and this could increase the risk of cybervictimization. Cybervictimization was found to be associated with depression. Nonetheless, studies that used the Salutogenic Model of Health supported the moderating effect of sense of coherence in this association. Since no study has been conducted to access the moderating effect of sense of coherence between cybervictimization and depression in Malaysia, this study aims to investigate the association between cybervictimization and depression, as well as to investigate the moderating role of sense of coherence in this association among adolescent cybervictims. The final sample comprised 357 participants (age $M = 14.34$, $SD = 0.86$) who were recruited using purposive sampling in secondary schools located in Peninsular Malaysia and East Malaysia. Data was collected via paper-and-pencil questionnaires and online questionnaires. The measurements used were the European Cyberbullying Intervention Project Questionnaire, Sense of Coherence scale, and Short Mood and Feelings Questionnaire. From the path model, cybervictimization was positively associated with depression. Besides, moderation analysis indicated that sense of coherence was a significant moderator in the relationship between cybervictimization and depression. When sense of coherence was low, increased severity of cybervictimization was linked with increased depression. However, the strength of this association weakened when sense of coherence was high. In overall, the results contributed to raising awareness among authorities, parents, and adolescents to promote sense of coherence in prevention programs, as well as

filling in the gaps regarding the moderating role of sense of coherence in the cybervictimization context among Malaysian adolescents.

Keywords: cybervictimization, sense of coherence, depression, adolescents

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APPROVAL SHEET

This dissertation/thesis entitled "**CYBERVICTIMIZATION AND DEPRESSION AMONG MALAYSIAN ADOLESCENTS: SENSE OF COHERENCE AS A MODERATOR"** was prepared by TEE XIANG YI and submitted as partial fulfillment of the requirements for the degree of Master of Philosophy (Social Science) at Universiti Tunku Abdul Rahman.

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SUBMISSION OF DISSERTATION

It is hereby certified that Tee Xiang Yi (ID No: 19AAM00979) has completed this dissertation entitled "Cybervictimization and Depression among Malaysian Adolescents: Sense of Coherence as a Moderator" under the supervision of Dr. Siah Poh Chua (Supervisor) from the Department of Psychology and Counselling, Faculty of Arts and Social Science, and Ms. Komathi a/p Lokithasan (Co-Supervisor) from the Department of Psychology and Counselling, Faculty of Arts and Social Science.

I understand that University will upload softcopy of my dissertation in PDF format into UTAR Institutional Repository, which may be made accessible to UTAR community and public.

Yours truly,

_____
(Tee Xiang Yi)

DECLARATION

I, Tee Xiang Yi, hereby declare that the dissertation is based on my original work except for citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at UTAR or other institutions.

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(Tee Xiang Yi)

Date: 24 February 2023

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LIST OF ABBREVIATIONS

SPSS	Statistical Package for Social Science
VIF	Variance Inflation Factor
PLS	Partial Least Squares

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<div align="center">**Introduction**</div>

1.1 Background Information

A review focusing on children and adolescents found that the prevalence rates of cybervictimization ranged from 13.99% to 57.50%, with Malaysia reporting the second highest prevalence rate (52.20%) among the nine studies conducted in seven countries (Zhu, Huang et al., 2021). Besides the established links between cybervictimization and various mental health problems, there were also doubt that parents had less monitoring and supervision on the adolescents' online activities, which could be reasonable to speculate that cybervictimization was pervasive among adolescents (Selkie et al., 2016). According to a survey by the Malaysian Communications and Multimedia Commission in 2020, only 34.4% parents were aware of and adopted parental control measures (such as setting rules or limits of using the Internet, and checking their children's social media accounts) to protect their children on the Internet. With the rising prevalence of cybervictimization and possible risk to be exposed to cybervictimization among adolescents, this study focused on cybervictimization. Cybervictimization is the exposure to cyberbullying behaviors (Yildiz Durak & Saritepeci, 2020), which is defined as the aggressive behaviors performed using electronic devices, particularly mobile phones and the Internet (Del Rey et al., 2012).

Adolescents were chosen as the target sample group in this study, since cybervictimization peaked around 13 to 15 years old (Slonje & Smith, 2008), indicating that adolescents who were newly enrolled in lower secondary school level were at risk of experiencing cybervictimization. It could be because adolescents were getting more used to communicating online and therefore might be more vulnerable to the risk of experiencing cybervictimization (Sathyanarayana Rao et al., 2018). Besides, the increasing need for sense of social dominance or peer belongingness, greater stress in new school environments or

increased academic demands might also promote exposure to cybervictimization during school transition (Cross et al., 2018).

Cybervictimization was related to various negative outcomes, including depression, emotional symptoms, suicidality, and social stress. This study focused on depression since it was the most frequently reported outcome (Nixon, 2014) and it was one of the most severe consequences reported by cybervictims (Field, 2018), such as depression was the main risk factor of suicidality (Roca et al., 2019).

However, not all adolescents would experience negative outcomes after experiencing cybervictimization (Raskauskas & Huynh, 2015). Their responses in the face of stressors might be affected by the sense of coherence, which is the generalized orientation characterized by the continuum of perceiving the world as comprehensible, manageable, and meaningful (Antonovsky, 1996). Based on the Salutogenic Model of Health, sense of coherence is the main concept which describes how individuals cope and manage mental health issues (Antonovsky, 1996). Previous studies have also supported the moderating effect of sense of coherence in the relationship between stressors and health outcomes (Barni et al., 2020; Moksnes & Haugan, 2015). However, in the current knowledge, no study has been conducted to examine the moderating effect of sense of coherence in the relationship between cybervictimization and depression in Malaysia.

Accordingly, this study used the Salutogenic Model of Health as a framework to examine whether the relationship between cybervictimization and depression was moderated by sense of coherence. A total of 406 Malaysian adolescents were recruited to fill in a questionnaire and partial least equation modeling was used to examine the moderating effect.

1.2 Problem Statement

This study targeted cybervictimization among adolescents as there was a growing phenomenon of cybervictimization among Malaysian students (National Human Rights Society Malaysia, 2018). In 2014, one in four school children claimed to have been bullied online, and the majority of cybervictims were those between 13 and 15 years old (Digi et al., 2015). This 25% who reported being cybervictims were likely to keep quiet about the incidents and hoped that the cybervictimization would stop after some time (Ahmad Ghazali et al., 2020). As such, the actual number of cybervictimization could have been higher than the number of reported cases (Lai et al., 2017).

This study examined the effects of cybervictimization on depression. Although adolescents reported various detrimental effects after experiencing cybervictimization (Görzig & Machackova, 2015), a review conducted by Nixon (2014) reported that depression was being predominantly examined among cybervictims. Wang et al. (2020) also found that adolescents had a higher possibility to developing depression after experiencing cybervictimization. Thai et al. (2022) even suggested that adolescents who previously experienced cybervictimization were 1.81 times higher to develop depression.

Lastly, this study used the Salutogenic Model of Health as a framework to examine whether sense of coherence moderated the effects of cybervictimization on depression. In the literature review, it was found that there were inconsistencies in the studies related to the moderating role of sense of coherence among adolescents, and Moksnes and Haugan (2015) suggested that the nonsignificant moderation effects of sense of coherence might be due to the contexts being studied, as sense of coherence might moderate stress only in a specific situation. Accordingly, the moderating effect of sense of coherence in the relationship between cybervictimization and depression was investigated as no relevant study has been conducted in Malaysia when searched in the Scopus database.

1.3 Significance of Study

From this study, it is hoped to obtain statistical evidence from the results on the association between cybervictimization and depression, and to contribute practically in the design of prevention programs to prevent or reduce depression in the face of cybervictimization. Preventive measures were crucial as cybervictimization could be associated with various negative consequences (Palladino et al., 2019), for instance adolescents might have an increased risk to develop depression after being cybervictimized, and the situation could worsen as depression might also increase suicide risk, as mentioned in the background information and problem statement. Thus, it is important for parents, teachers, and adolescents to realize that cybervictimization can affect mental health and for adolescents to refrain from engaging in cybervictimization in the first place.

Besides, it is expected to contribute the data into understanding whether the heightening of sense of coherence might be able to prevent or reduce depression after facing cybervictimization. Sense of coherence is not a specific style of coping, but rather it consists of a broad range of coping strategies and assists adolescents to choose appropriate coping strategies in particular stressful situations (Einav & Margalit, 2020). Sense of coherence might buffer against depression as it was linked with stress management and a sense of meaningfulness towards life (Grevenstein et al., 2016). In this sense, sense of coherence could encourage the utilization of generalized resistance resources to deal with cybervictimization, thus promoting the developmental process of adolescents (Moksnes et al., 2014), which is in line with the Salutogenic Model of Health (Antonovsky, 1996). It is hoped that this study would provide information regarding the buffering role of sense of coherence in the cybervictimization context. Theoretically, this study could provide statistical evidence which extended the Salutogenic Model of Health by considering cybervictimization as the

stressor, as up to the current knowledge, there was a lack of research examining sense of coherence as the moderator after adolescents experienced cybervictimization in Malaysia.

Hopefully, this study could also provide information relevant to cybervictimization and its impact in terms of depression, as well as the moderating effect of sense of coherence in the Malaysian context. This might be able to fill in the knowledge gap in the society regarding health-related issues. The results may indicate whom, in term of sense of coherence level, may be more adaptive to deal with cybervictimization by looking into the association with depression, which may be presented in the form of reduced levels of depression. Besides, the understanding of sense of coherence in buffering against cybervictimization in the Malaysian context is crucial to suggest tailored remedial actions which suit the individuals' values to reduce the negative effects of cybervictimization, such as promoting generalized resistance resources which are in line with the local context (Braun-Lewensohn & Sagy, 2011). Therefore, this study could validate previous studies' results and serve as a future reference for relevant studies in the Malaysian context.

1.4 Aims of Study

By using the Salutogenic Model of Health as the framework, which outlines the stress-buffering role of sense of coherence in affecting psychological health, this study aims to examine the association between cybervictimization and depression, as well as the moderating role of sense of coherence in this association. The research objectives, research questions, and hypotheses are as follows:

1.5 Research Objectives

1.   To examine the association between cybervictimization and depression.

2.   To examine the moderating effect of sense of coherence in the association between cybervictimization and depression.

1.6 Research Questions

1.   Is cybervictimization positively associated with depression?

2.   Does sense of coherence moderate the association between cybervictimization and depression?

1.7 Hypothesis

H_1: Cybervictimization is positively associated with depression.

H_2: Sense of coherence moderates the association between cybervictimization and depression.

1.8 Conceptual Definitions

      Cybervictimization. Cybervictimization is the exposure to cyberbullying behaviors (Yildiz Durak & Saritepeci, 2020), which are the aggressive behaviors performed through the use of electronic devices, particularly mobile phones and the Internet (Del Rey et al., 2012). The definition also includes criteria of intentionality and repeated harm done on someone (Brown et al., 2014). Cybervictimization behaviors consisted of written-verbal (calls, messages, or comments), visual (photos or videos), online exclusion (not being accepted or has been removed from social network or instant messaging chat groups), and impersonation (cyberbullies use the identity of cybervictims to make fun of them or cause them trouble) (Nocentini et al., 2010).

Depression. The core experience of depression is feeling sad or down, with the symptoms varying widely across individuals (Kanter et al., 2008). The signs and symptoms of depression might include persistent sadness, loss of interest or pleasure in activities, sleep disturbance, changes in appetite, tiredness, and difficulties concentrating on tasks (World Health Organization, n.d.).

Sense of Coherence. According to Antonovsky (1996), sense of coherence is defined as a generalized orientation toward the continuum of perceiving the world as comprehensible, manageable, and meaningful. Sense of coherence is a crucial salutogenic factor that is related to various health aspects, well-being, health-related behaviors, and psychological adjustment, such as depression (Lajunen, 2019). Sense of coherence is developed through coping with adverse situations in childhood, adolescence, and young adulthood stages (Grevenstein & Bluemke, 2015). It can be considered a self-evaluative construct, which reflects the evaluation of own capability to respond appropriately and adaptively in the face of difficult or challenging events (Novin et al., 2018).

Adolescents. The adolescence stage is one of the most rapid developmental phases, and many health-related behaviors which take place in this stage may affect present and future health and development (World Health Organization, 2020). The World Health Organization (2020) claimed that although it is convenient to use age to define adolescence, it is only one of the characteristics to describe this developmental stage. Adolescents are those from the age group between 10 and 19 years old.

1.9 Operational Definitions

Cybervictimization. The 11-item cybervictimization subscale of the European Cyberbullying Intervention Project Questionnaire (Brighi et al., 2012) was used to measure cybervictimization in this study. The items are rated on a 5-point Likert scale to measure

cybervictimization experiences. The higher the mean score, the more frequently an adolescent experiences cybervictimization (Erreygers et al., 2018).

Depression. The level of depression was measured using the Short Mood and Feelings Questionnaire (Angold et al., 1995). There are a total of 13 items with 3-point Likert scale to access the affective and cognitive symptoms of depression. The higher the mean score, the higher the level of depression (Nesi & Prinstein, 2015).

Sense of Coherence. Sense of coherence was measured using the 13-item Sense of Coherence scale (Antonovsky, as cited in Feldt & Rasku, 1998). Among the 13 items, five are reverse-scored items. All the items are rated on a 7-point Likert scale, in which the higher mean score indicated higher level of sense of coherence (Grevenstein & Bluemke, 2022).

Adolescents. The adolescents recruited in this study ranged between 13 to 15 years old as cybervictimization peaked around this period (Slonje & Smith, 2008). This age range is within adolescence stage suggested by the World Health Organization (2020). The adolescents in this study were recruited using paper-and-pencil questionnaires and online questionnaires.

1.10 Organization of the Thesis

This thesis consists of five chapters. Chapter one provides an overview of the study background, issues which deem attention, significance, aim, objectives, and hypotheses of the study, as well as the conceptual definitions of the variables examined. Chapter two is the literature review on the studies of cybervictimization, depression, and sense of coherence among adolescent samples. The model used in this study, namely the Salutogenic Model of Health is presented in this chapter. Past studies and the model will be discussed to develop the conceptual framework. Chapter three presents the method used in this study. Chapter four shows the results of the study, including analyses of the data. Chapter five continues in

presenting the discussion, which explains the answers to the research questions and highlights the theoretical and practical implications of the results, limitations, and future recommendations. At last, there will be conclusion of the results and discussion of this study.

Chapter II

Literature Review

A scoping review guided by the process framework as suggested by Arksey and O'Malley (2005) was conducted to explore the unique features and prevalence of cybervictimization as well as its outcomes. Furthermore, the relationships among cybervictimization, sense of coherence, and depression were also assessed using the scoping review. Scopus database was used to access the journal articles as it was one of the largest abstract and citation databases with high-quality contents selected by independent reviewers for publication (Baas et al., 2020), which covered psychology research (Burnham, 2006). The related keywords and the year of study were inserted in the search box. Initially, abstract screening was done by looking at the title and abstract, and those which did not fulfill the inclusion criteria would be excluded, for instance sample age groups other than adolescents which did not fit the inclusion criteria. After that, the full-text articles would be further screened according to the inclusion criteria. All the articles which fulfilled the inclusion criteria were included in the review for this study.

2.1 Cybervictimization Definition

2.1.1 Study Selection Process

In order to better understand the definition and unique features of cybervictimization, the articles were selected for review by using keywords, namely cybervictimization, cyberbullying victimization, features, definition, and concepts. Other inclusion criteria were English-written psychological articles published between 2017 and 2021. Referring to Figure 1 for the flow chart of article selection, the initial results of the Scopus database search found 29 articles that fulfilled the inclusion criteria, but 11 articles were further excluded due to types of study (systematic review, meta-analysis, psychometric study) and cybervictimization

was not mainly examined in the studies. After that, five articles were also excluded as the full-text articles were not available to be viewed or downloaded. Finally, 13 articles were included in the review.

Figure 1

Flow Diagram of the Study Selection Process on Cybervictimization Definition
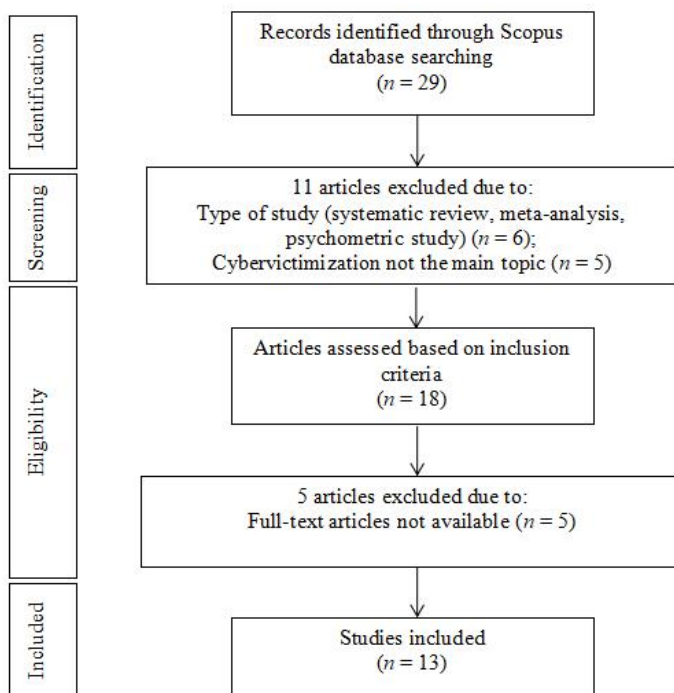
2.1.2 Overview of Articles

As seen from Table 1, two articles (Cole et al., 2016; Dredge et al., 2014a) provided the definition of cybervictimization, nine articles (Baldry et al., 2019; Cénat et al., 2014; Doane et al., 2016; Dredge et al., 2014a; Geng et al., 2022; Kim et al., 2018; Marco et al., 2018; Olenik-Shemesh & Heiman, 2017; Şahın, 2012) had provided the definition of cyberbullying, whereas the remaining three articles (Chu et al., 2019; Dredge et al., 2014b; Lee & Chun, 2020) did not mention the definition of cybervictimization or cyberbullying. Most only cited the definition of cyberbullying but not cybervictimization even though the article titles involved "cybervictimization" or "cyberbullying victimization" as the main focus.

It seemed that the definition of cybervictimization was often overlooked, as there was a possibility that most combined cyberbullying and cybervictimization due to their similar key point characteristics.

Both cybervictimization and cyberbullying have similar key points in the definitions, such as also involving intentional and repeated aggressive acts. For instance, the commonly used definition of cyberbullying was adapted from Smith et al. (2008) in five articles (Baldry et al., 2019; Cole et al., 2016; Dredge et al., 2014a; Kim et al., 2018; Olenik-Shemesh & Heiman, 2017), defined as the aggressive acts performed using electronic means, which are intentionally and repeatedly done on someone who cannot easily defend oneself.

On the other hand, only two studies (Cole et al., 2016; Dredge et al., 2014a) provided the definition of cybervictimization. Cybervictimization was referred to as an individual's own perception that they had either experienced brief or repeated aggression acts being performed by one or more cyberbullies (Aquino & Bradfield, 2000, as cited in Dredge et al., 2014a). Similarly, cybervictims were intentionally targeted to cause harm through the use of electronic media (e.g. Leung & McBride-Chang, 2013, as cited in Cole et al., 2016).

Although there were some similarities in definitions of cybervictimization and cyberbullying, the main difference was that cybervictims were the ones who received the aggression acts, whereas on the opposite side, cyberbullies performed the aggression acts on others (Rodríguez-Hidalgo et al., 2020). As cybervictimization was the exposure to cyberbullying behaviors (Yildiz Durak & Saritepeci, 2020), it was suggested that the definition of cybervictimization could have been derived from the definition of cyberbullying.

Table 1

Definition of Cybervictimization or Cyberbullying being Adapted in the Studies

	Reference	Definition Adapted	
		Cybervictimization	Cyberbullying
1	Cole, D. A., Zelkowitz, R. L., Nick, E., Martin, N. C., Roeder, K. M., Sinclair-McBride, K., & Spinelli, T. (2016). Longitudinal and incremental relation of cybervictimization to negative self-cognitions and depressive symptoms in young adolescents. *Journal of Abnormal Child Psychology*, *44* (7), 1321–1332. https://doi.org/10.1007/s10802-015-0123-7	Involves an intentional act to inflict harm on another using electronic media (Leung & McBride-Chang, 2013; Smith et al., 2008; Sontag et al., 2011; Williford et al., 2013)	-
2	Dredge, R., Gleeson, J., & de la Piedad Garcia, X. (2014a). Presentation on Facebook and risk of cyberbullying victimisation. *Computers in Human Behavior*, *40*, 16–22. https://doi.org/10.1016/j.chb.2014.07.035	An individual's "self-perception of having been exposed, either momentarily or repeatedly, to aggressive actions emanating from one or more other persons (Aquino & Bradfield, 2000)	An aggressive, intentional act carried out by a group or individual, using electronic forms of contact, repeatedly and over time against a victim who cannot easily defend him or herself (Smith et al., 2008)
3	Baldry, A. C., Sorrentino, A., & Farrington, D. P. (2019). Cyberbullying and cybervictimization versus parental supervision, monitoring and control of adolescents' online activities. *Children and Youth Services Review*, *96*, 302–307. https://doi.org/10.1016/j.childyouth.2018.11.058	-	
4	Kim, S., Colwell, S. R., Kata, A., Boyle, M. H., & Georgiades, K. (2018). Cyberbullying victimization and adolescent mental health: Evidence of differential effects by sex and mental health problem type. *Journal of Youth and Adolescence*, *47* (3), 661–672. https://doi.org/10.1007/s10964-017-0678-4		
5	Şahin, M. (2012). The relationship between the cyberbullying/cybervictimization and loneliness among adolescents. *Children and Youth Services Review*, *34* (4), 834–837. https://doi.org/10.1016/j.childyouth.2012.01.010		-A behavior indirectly the same as traditional bullying behavior but one which is a little different in terms of its repetitive nature and psychological violent content (Ybarra & Mitchell, 2004) -A behavior in the virtual environment which contains deliberate and repetitive violence and insult (Patchin & Hinduja, 2008) -Repetitive and destructive sense or attitude of damaging others through the use of cell phones, internet, e-mail etc. (Li, 2007)
6	Cénat, J. M., Hébert, M., Blais, M., Lavoie, F., Guerrier, M., & Derivois, D. (2014). Cyberbullying, psychological distress and self-esteem among youth in Quebec schools. *Journal of Affective Disorders*, *169*, 7–9. https://doi.org/10.1016/j.jad.2014.07.019	-	An intentional, aggressive and repetitive behavior perpetrated by a more powerful individual against someone more vulnerable through the use of technology (Kowalski et al., 2012)

#	Reference		Definition
7	Doane, A. N., Boothe, L. G., Pearson, M. R., & Kelley, M. L. (2016). Risky electronic communication behaviors and cyberbullying victimization: An application of Protection Motivation Theory. *Computers in Human Behavior*, *60*, 508–513. https://doi.org/10.1016/j.chb.2016.02.010	-	Willful and repeated harm inflicted through the use of computers, cell phones, and other electronic devices (Hinduja & Patchin, 2009)
8	Olenik-Shemesh, D., & Heiman, T. (2017). Cyberbullying victimization in adolescents as related to body esteem, social support, and social self-efficacy. *The Journal of Genetic Psychology*, *178*(1), 28–43. https://doi.org/10.1080/00221325.2016.1195331	-	Bullying that occurs through electronic means (Hinduja & Patchin, 2013; Smith et al., 2008)
9	Marco, J. H., Tormo-Irun, M. P., Galán-Escalante, A., & Gonzalez-García, C. (2018). Is cybervictimization associated with body dissatisfaction, depression, and eating disorder psychopathology? *Cyberpsychology, Behavior, and Social Networking*, *21*(10), 611–617. https://doi.org/10.1089/cyber.2018.0217	-	A specific form of unwarranted, intentional, and prolonged aggression that appears between peers and occurs in the digital environment through the use of electronic media (Tokunaga, 2010)
10	Geng, J., Wang, Y., Wang, P., Zeng, P., & Lei, L. (2022). Gender differences between cyberbullying victimization and meaning in life: Roles of fatalism and self-concept clarity. *Journal of Interpersonal Violence*, *37*(19–20), NP17157–NP17181. https://doi.org/10.1177/08862605211028285	-	Use information and communication technologies to repeatedly and intentionally harm, harass, hurt and/or embarrass a target (Peter & Petermann, 2018)
11	Chu, X.-W., Fan, C.-Y., Lian, S.-L., & Zhou, Z.-K. (2019). Does bullying victimization really influence adolescents' psychosocial problems? A three-wave longitudinal study in China. *Journal of Affective Disorders*, *246*, 603–610. https://doi.org/10.1016/j.jad.2018.12.103	-	-
12	Dredge, R., Gleeson, J. F. M., & de la Piedad Garcia, X. (2014b). Risk factors associated with impact severity of cyberbullying victimization: A qualitative study of adolescent online social networking. *Cyberpsychology, Behavior, and Social Networking*, *17*(5), 287–291. https://doi.org/10.1089/cyber.2013.0541	-	-
13	Lee, S., & Chun, J. S. (2020). Conceptualizing the impacts of cyberbullying victimization among Korean male adolescents. *Children and Youth Services Review*, *117*, 1–8. https://doi.org/10.1016/j.childyouth.2020.105275	-	-

2.1.3 Summary

To sum up, a consensus was reached to a certain extent regarding the features of cybervictimization: took place through the use of electronic means, cyberbullies have the intention to harm, repetitive aggression acts over time, and power imbalance between the cyberbullies and cybervictims. The first feature, namely electronic means was uniquely for the cybervictimization context. Cybervictimization commonly occurred on social networking sites and was a form of negative social relationship which mainly damaged one's reputation (Bottino et al., 2015). However, the other features including the intention to harm, repetition or prolonged period, aggression acts, and power imbalance were similar to those found in traditional victimization context.

2.2 Prevalence of Cybervictimization

2.2.1 Study Selection Process

The prevalence of cybervictimization was examined to have an overview of the severity of incidents in different countries. The articles were selected for review by using keywords, namely cybervictimization, cyberbullying victimization, prevalence, and prevalent. Other inclusion criteria were English-written psychological articles published between 2017 and 2021. Referring to Figure 2, the initial results of the Scopus database search found 35 articles that fulfilled the inclusion criteria, but 19 articles were further excluded due to the types of study (systematic review, meta-analysis, psychometric study), cybervictimization was not mainly examined in the studies, non-adolescent sample age group, and did not report the prevalence rate of cybervictimization. After that, one article was excluded as the full-text articles were not available to be viewed or downloaded, and nine articles were also excluded due to not mentioning or adapting the random sampling method when collecting data. Finally, six articles were included in the review.

Figure 2

Flow Diagram of the Study Selection Process on Prevalence of Cybervictimization
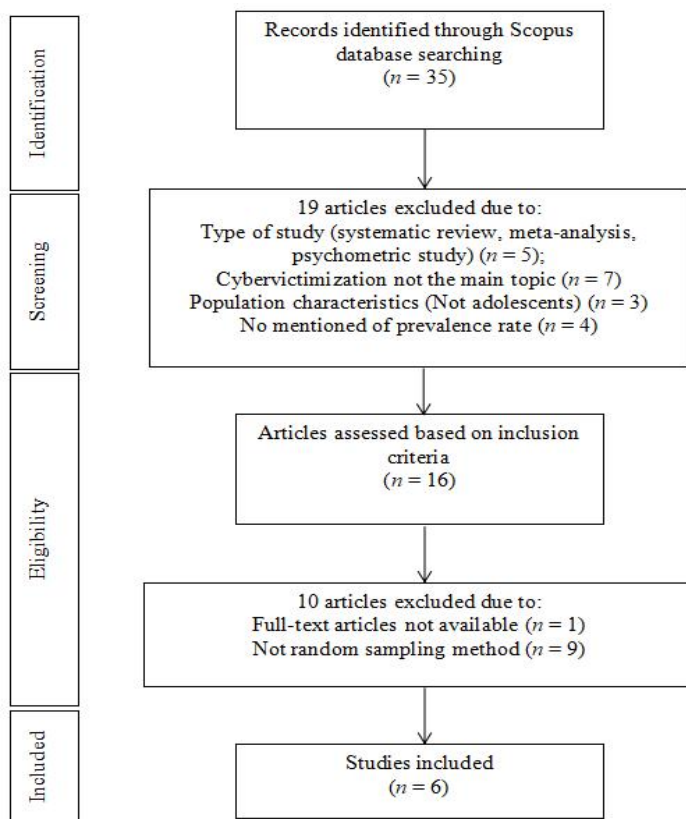
2.2.2 Overview of Articles

An overview of the articles on the prevalence rate of cybervictimization in various countries could be found in Table 2. The prevalence rate of cybervictimization would be highlighted according to the countries in the following paragraphs.

Firstly, in Singapore, Khong et al. (2020) collected responses from 3,319 adolescents aged 12 to 17. Around 12.1% of them had experienced being cybervictimized. Furthermore, Deryol et al. (2022) assessed the cross-national data of 110,718 adolescents with a mean age of 13.55 across 23 countries, and around 15.0% of them experienced cybervictimization.

Meanwhile, in the United States of America, Copp et al. (2021) conducted a longitudinal study involving the collection of responses with twelve months gap between

time points from 1,152 adolescents aged 10 to 18. The prevalence rate of cybervictimization was as high as 37.0% in this study.

In Spain, Zych and Llorent (2021) specifically examined bias-based cybervictimization among 2,139 adolescents aged 11 to 19. It was found that sexual and ethnic-cultural majority groups had a lower risk of being cybervictimized, recording 7.4% compared to 27.4% as reported by immigrants.

In Belgium, DeSmet et al. (2018) sample consisted of 1,037 adolescents aged 12 to 18. Participants from non-heterosexual groups generally reported a higher prevalence rate of cybervictimization in comparison with those from heterosexual groups. For instance, the prevalence rates of being cybervictimized using embarrassing images were 10.3% and 7.0% among the participants from non-heterosexual groups and from heterosexual groups respectively.

Lastly, in Canada, Salmon et al. (2018) assessed the data of 64,174 adolescents aged 11 to 18. It was found that the prevalence rate of cybervictimization ranged from 5.8% (feeling unsafe when interacting with others online) to 15.0% (being asked to disclose personal information online) among males. In comparison, the prevalence rate of cybervictimization was higher, ranging from 13.2% (feeling unsafe when interacting with others online) to 24.1% (being asked to disclose personal information online) among females.

Table 2

Summary of the Articles on Prevalence of Cybervictimization

	Reference	Research Design	Measurements	Sample	Location	Cybervictimization Type	Cybervictimization Prevalence Rate
			Cybervictimization				
1	Copp, J. E., Mumford, E. A., & Taylor, B. G. (2021). Online sexual harassment and cyberbullying in a nationally representative sample of teens: Prevalence, predictors, and consequences. *Journal of Adolescence*, *93*, 202–211. https://doi.org/10.1016/j.adolescence.2021.10.003	Longitudinal (twelve months gap between time points)	Three-item scale from the National Survey on Teen Relationships and Intimate Violence (STRiV)	1,152 adolescents aged 10 to 18	United States	-	37.0% (53.52% females, 46.48% males)
2	Deryol, R., Wilcox, P., & Stone, S. (2022). Individual risk, country-level social support, and bullying and cyberbullying victimization among youths: A cross-national study. *Journal of Interpersonal Violence*, *37*(17–18), NP15275–NP15311.	Cross-sectional	Two-item scale from Health Behavior in School Aged Children (HBSC) survey	110,718 adolescents with the mean age of 13.55	In 23 countries	-	15.0% (5.0% - 24.0% across the 23 countries)
3	DeSmet, A., Rodelli, M., Walrave, M., Soenens, B., Cardon, G., & De Bourdeaudhuij, I. (2018). Cyberbullying and traditional bullying involvement among heterosexual and non-heterosexual adolescents, and their associations with age and gender. *Computers in Human Behavior*, *83*, 254–261. https://doi.org/10.1016/j.chb.2018.02.010	Cross-sectional	Single-item scale, cyberbullying questionnaire (Menesini et al., 2011)	1,037 adolescents aged 12 to 18	Belgium	-	Single-item scale: 7.6% (7.3% non-LGBQ, 11.6% LGBQ)
4	Khong, J. Z. N., Tan, Y. R., Elliott, J. M., Fung, D. S. S., Sourander, A., & Ong, S. H. (2020). Traditional victims and cybervictims: Prevalence, overlap, and association with mental health among adolescents in Singapore. *School Mental Health*, *12*(1), 145–155. https://doi.org/10.1007/s12310-019-09337-x	Cross-sectional	Questionnaire scale (Sourander et al., 2010)	3,319 adolescents aged 12 to 17	Singapore	-	12.1% (3.8% cybervictims only)
5	Salmon, S., Turner, S., Taillieu, T., Fortier, J., & Afifi, T. O. (2018). Bullying victimization experiences among middle and high school adolescents: Traditional bullying, discriminatory harassment, and cybervictimization. *Journal of Adolescence*, *63*, 29–40. https://doi.org/10.1016/j.adolescence.2017.12.005	Cross-sectional	Youth Health Survey (Partners in Planning for Healthy Living, 2013)	64,174 adolescents aged 11 to 18	Canada	-	5.8% - 15.0% (males)
6	Zych, I., & Llorent, V. J. (2021). Bias-based cyberbullying in Spanish adolescents and its relation to social and emotional competencies and technology abuse. *The Journal of Early Adolescence*. Advance online publication. https://doi.org/10.1177/02724316211020365	Cross-sectional	The European Cyberbullying Intervention Project Questionnaire (Ortega Ruiz et al., 2016)	2,139 adolescents aged 11 to 19	Spain	Bias-based	7.4% (majority group) - 27.4% (immigrants)

2.2.3 Summary

In summary, the sample sizes of these studies ranged from around thousands to hundred thousand. As for the location of the study, studies were commonly conducted in the United States of America and Western countries including Spain and Canada. The only study conducted in a Southeast Asian country was Singapore.

Among adolescent samples, the prevalence rate of cybervictimization ranged from the lowest to the highest was 5.8% (Canada) (Salmon et al., 2018) to 37.0% (the United States of America) (Copp et al., 2021). The high prevalence rate of cybervictimization reported also included 27.4% in Spain (Zych & Llorent, 2021) and 15.0% in a cross-national study (Deryol et al., 2022). In contrast, the low prevalence rate of cybervictimization was recorded as 7.6% in Belgium (DeSmet et al., 2018) and 7.4% in Spain (Zych & Llorent, 2021). Such range of prevalence rates suggested that the cybervictimization phenomenon should be attended to, thus this study focused on cybervictimization.

2.3 Outcomes of Cybervictimization

2.3.1 Study Selection Process

The outcomes of cybervictimization were also reviewed to explore the possible outcome variable as the focus of this study. The articles were selected by using keywords, namely cybervictimization, cyberbullying victimization, impact, outcome, consequence, effect, adolescent, adolescence, and adolescents. Other inclusion criteria were English-written psychological articles published between 2017 and 2021. Referring to Figure 3, the initial results of the Scopus database search found 65 articles that fulfilled the inclusion criteria, but 31 articles were further excluded due to types of study (systematic review, meta-analysis, psychometric study), cybervictimization was not the predictor in the studies, and non-

adolescent populations. After that, four articles were excluded as the full-text articles were not available to be viewed or downloaded. Finally, 30 articles were included in the review.

Figure 3

Flow Diagram of the Study Selection Process on Outcomes of Cybervictimization
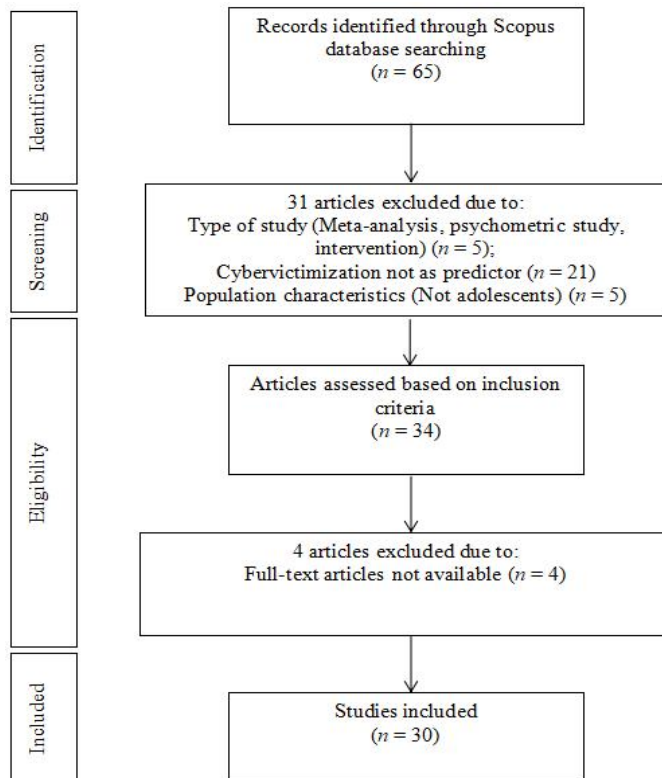
2.3.2 Overview of Articles

From Table 3, an overview of the articles could be found, including the sample age group, the location of the study being conducted, and the outcomes examined. Table 4 further showed the total number of outcomes being measured in various studies.

Table 3

Summary of the Articles on Outcomes of Cybervictimization

	References	Research Design	Sample	Location	Outcomes
1	Baiden, P., & Tadeo, S. K. (2019). Examining the association between bullying victimization and prescription drug misuse among adolescents in the United States. *Journal of Affective Disorders*, *259*, 317–324. https://doi.org/10.1016/j.jad.2019.08.063	Cross-sectional	9,974 adolescents aged 14 to 18 from the 2017 Youth Risk Behavior Survey	United States	Prescription drug misuse
2	Baiden, P., & Tadeo, S. K. (2020). Investigating the association between bullying victimization and suicidal ideation among adolescents: Evidence from the 2017 Youth Risk Behavior Survey. *Child Abuse & Neglect*, *102*, 1–12. https://doi.org/10.1016/j.chiabu.2020.104417	Cross-sectional	14,765 participants aged 14 to 18 from the 2017 Youth Risk Behavior Survey	United States	Suicidal ideation
3	Chu, X.-W., Fan, C.-Y., Liu, Q.-Q., & Zhou, Z.-K. (2018). Cyberbullying victimization and symptoms of depression and anxiety among Chinese adolescents: Examining hopelessness as a mediator and self-compassion as a moderator. *Computers in Human Behavior*, *86*, 377–386. https://doi.org/10.1016/j.chb.2018.04.039	Cross-sectional	489 adolescents aged 11 to 15	China	Depression, anxiety
4	Gao, L., Liu, J., Yang, J., & Wang, X. (2021). Longitudinal relationships among cybervictimization, peer pressure, and adolescents' depressive symptoms. *Journal of Affective Disorders*, *286*, 1–9. https://doi.org/10.1016/j.jad.2021.02.049	Longitudinal (twelve months gap between time points)	2,407 adolescents aged 11 to 16	China	Depressive symptoms
5	Geng, J., Wang, Y., Wang, P., Zeng, P., & Lei, L. (2022). Gender differences between cyberbullying victimization and meaning in life: Roles of fatalism and self-concept clarity. *Journal of Interpersonal Violence*, *37*(19–20), NP17157–NP17181. https://doi.org/10.1177/08862605211028285	Cross-sectional	766 adolescents aged 10 to 16	China	Presence of meaning in life
6	Iranzo, B., Buelga, S., Cava, M.-J., & Ortega-Barón, J. (2019). Cyberbullying, psychosocial adjustment, and suicidal ideation in adolescence. *Psychosocial Intervention*, *28*(2), 75–81. https://doi.org/10.5093/pi2019a5	Cross-sectional	1,062 adolescents aged 12 to 18	Spain	Suicide ideation
7	Kim, S., Colwell, S. R., Kata, A., Boyle, M. H., & Georgiades, K. (2018). Cyberbullying victimization and adolescent mental health: Evidence of differential effects by sex and mental health problem type. *Journal of Youth and Adolescence*, *47*(3), 661–672. https://doi.org/10.1007/s10964-017-0678-4	Cross-sectional	31,148 adolescents (Grade 6 to 8) from the 2014 Ontario Child Health Study	Canada	Emotional problems (depression, anxiety), behavioral problems (conduct disorder, oppositional defiant disorder)
8	Lee, S., & Chun, J. S. (2020). Conceptualizing the impacts of cyberbullying victimization among Korean male adolescents. *Children and Youth Services Review*, *117*, 1–8. https://doi.org/10.1016/j.childyouth.2020.105275	Cross-sectional	47 male adolescents aged 15 to 16	Korea	Internalized problems, externalized problems, school and peer problems, online problems, seeking social support, and avoidance

9	Marengo, D., Settanni, M., Fabris, M. A., & Longobardi, C. (2021). Alone, together: Fear of missing out mediates the link between peer exclusion in WhatsApp classmate groups and psychological adjustment in early-adolescent teens. *Journal of Social and Personal Relationships*, *38*(4), 1371–1379. https://doi.org/10.1177/0265407521991917	Cross-sectional	398 adolescents aged 11 to 15	Italy	Emotional symptoms
10	Martínez-Ferrer, B., León-Moreno, C., Suárez-Relinque, C., Del Moral-Arroyo, G., & Musitu-Ochoa, G. (2021). Cybervictimization, offline victimization, and cyberbullying: The mediating role of the problematic use of social networking sites in boys and girls. *Psychosocial Intervention*, 30(3), 155–162.	Cross-sectional	2,011 adolescents aged 12 to 18	Spain	Cyberbullying
11	McLoughlin, L. T., Spears, B. A., Taddeo, C. M., & Hermens, D. F. (2019). Remaining connected in the face of cyberbullying: Why social connectedness is important for mental health. *Psychology in the Schools*, *56*(6), 945–958. https://doi.org/10.1002/pits.22232	Cross-sectional	229 adolescents aged 12 to 17	South Australia	Depression, anxiety, and stress
12	Moon, J., & Mello, Z. R. (2021). Time among the taunted: The moderating effect of time perspective on bullying victimization and self-esteem in adolescents. *Journal of Adolescence*, *89*, 170–182. https://doi.org/10.1016/j.adolescence.2021.05.002	Cross-sectional	190 adolescents aged 14 to 18	United States	Self-esteem
13	Morin, H. K., Bradshaw, C. P., & Kush, J. M. (2018). Adjustment outcomes of victims of cyberbullying: The role of personal and contextual factors. *Journal of School Psychology*, *70*, 74–88. https://doi.org/10.1016/j.jsp.2018.07.002	Cross-sectional	28,583 adolescents (Grade 9 to 12) from the Maryland Safe and Supportive Schools Initiative (MDS3) project	United States	Psychological adjustment (internalizing problems, sleep problems, stress) and academic adjustment (poor grades, truancy)
14	Navarro, R., Yubero, S., & Larrañaga, E. (2018). Cyberbullying victimization and fatalism in adolescence: Resilience as a moderator. *Children and Youth Services Review*, *84*, 215–221. https://doi.org/10.1016/j.childyouth.2017.12.011	Cross-sectional	643 adolescents aged 13 to 18	Spain	Fatalism
15	Perret, L. C., Orri, M., Boivin, M., Ouellet-Morin, I., Denault, A., Côté, S. M., Tremblay, R. E., Renaud, J., Turecki, G., & Geoffroy, M. (2020). Cybervictimization in adolescence and its association with subsequent suicidal ideation/attempt beyond face-to-face victimization: A longitudinal population-based study. *Journal of Child Psychology and Psychiatry*, *61*(8), 866–874. https://doi.org/10.1111/jcpp.13158	Cross-sectional and longitudinal (two years gap between time points)	2,120 participants aged 13 to 17 from the Quebec Longitudinal Study of Child Development (QLSCD)	Canada	Suicidal ideation or attempt
16	Przybylski, A. K. (2019). Exploring adolescent cyber victimization in mobile games: Preliminary evidence from a British Cohort. *Cyberpsychology, Behavior, and Social Networking*, 22(3), 227–231. https://doi.org/10.1089/cyber.2018.0318	Cross-sectional	1,004 adolescents aged 14 to 15	England, Scotland and Wales	Emotional symptoms, social support
17	Quintana-Orts, C., Rey, L., & Neto, F. (2021). Are loneliness and emotional intelligence important factors for adolescents? Understanding the influence of bullying and cyberbullying victimisation on suicidal ideation. *Psychosocial Intervention*, 30(2), 67–74. https://doi.org/10.5093/pi2020a18	Cross-sectional	1,929 students aged 12 to 19	Spain	Suicidal ideation

18	Quintana-Orts, C., Rey, L., & Neto, F. (2022). Beyond cyberbullying: Investigating when and how cybervictimization predicts suicidal ideation. *Journal of Interpersonal Violence*, *37*(1–2), 935–957. https://doi.org/10.1177/0886260520913640	Cross-sectional	1,821 adolescents aged 12 to 17	Spain	Suicidal ideation
19	Santos, D., Mateos-Pérez, E., Cantero, M., & Gámez-Guadix, M. (2021). Cyberbullying in adolescents: Resilience as a protective factor of mental health outcomes. *Cyberpsychology, Behavior, and Social Networking*, *24*(6), 414–420. https://doi.org/10.1089/cyber.2020.0337	Cross-sectional	2,108 adolescents aged 12 to 17	Spain	Depression symptoms, life satisfaction
20	Strohacker, E., Wright, L. E., & Watts, S. J. (2021). Gender, bullying victimization, depressive symptoms, and suicidality. *International Journal of Offender Therapy and Comparative Criminology*, *65*(10–11), 1123–1142. https://doi.org/10.1177/0306624X19895964	Cross-sectional	14,416 adolescents aged 12 to 18 from the 2017 National High School Youth Risk Behavior Surveillance System (YRBSS)	United States	Depressive symptoms, suicidality
21	Tian, L., Yan, Y., & Huebner, E. S. (2018). Effects of cyberbullying and cybervictimization on early adolescents' mental health: Differential mediating roles of perceived peer relationship stress. *Cyberpsychology, Behavior, and Social Networking*, *21*(7), 429–436. https://doi.org/10.1089/cyber.2017.0735	Cross-sectional and longitudinal (twelve months gap between time points)	606 adolescents aged 12 to 14	China	Depression, anxiety, subjective well-being in school
22	Van Ouytsel, J., Lu, Y., Ponnet, K., Walrave, M., & Temple, J. R. (2019). Longitudinal associations between sexting, cyberbullying, and bullying among adolescents: Cross-lagged panel analysis. *Journal of Adolescence*, *73*, 36–41. https://doi.org/10.1016/j.adolescence.2019.03.008	Longitudinal (twelve months gap between time points)	1,042 adolescents aged 13 to 18	United States	Sexting
23	Wachs, S., Vazsonyi, A. T., Wright, M. F., & Ksinan Jiskrova, G. (2020). Cross-national associations among cyberbullying victimization, self-esteem, and internet addiction: Direct and indirect effects of alexithymia. *Frontiers in Psychology*, *11*, 1–10. https://doi.org/10.3389/fpsyg.2020.01368	Cross-sectional	1,442 participants aged 12 to 17	Germany, the Netherlands, and the United States	Self-esteem, Internet addiction
24	Wang, Z., Xie, Q., Xin, M., Wei, C., Yu, C., Zhen, S., Liu, S., Wang, J., & Zhang, W. (2020). Cybervictimization, depression, and adolescent internet addiction: The moderating effect of prosocial peer affiliation. *Frontiers in Psychology*, *11*, 1–9. https://doi.org/10.3389/fpsyg.2020.572486	Cross-sectional	1,006 adolescents aged 12 to 16	China	Internet addiction
25	Wiguna, T., Irawati Ismail, R., Sekartini, R., Setyawati Winarsih Rahardjo, N., Kaligis, F., Prabowo, A. L., & Hendarmo, R. (2018). The gender discrepancy in high-risk behaviour outcomes in adolescents who have experienced cyberbullying in Indonesia. *Asian Journal of Psychiatry*, *37*, 130–135. https://doi.org/10.1016/j.ajp.2018.08.021	Cross-sectional	2,917 adolescents aged 11 to 18	Indonesia	Cigarette smoking, alcohol consumption, and self-harm behavior
26	Worsley, J. D., McIntyre, J. C., & Corcoran, R. (2019). Cyberbullying victimisation and mental distress: Testing the moderating role of attachment security, social support, and coping styles. *Emotional and Behavioural Difficulties*, *24*(1), 20–35. https://doi.org/10.1080/13632752.2018.1530497	Cross-sectional	476 adolescents aged 13 to 19	England	Depression, anxiety

27	Yang, C., Sharkey, J. D., Reed, L. A., & Dowdy, E. (2020). Cyberbullying victimization and student engagement among adolescents: Does school climate matter? *School Psychology*, *35*(2), 158–169. https://doi.org/10.1037/spq0000353	Cross-sectional	16,237 adolescents (Grade 6 to Grade 12)	United States	Student engagement
28	Yu, C., Xie, Q., Lin, S., Liang, Y., Wang, G., Nie, Y., Wang, J., & Longobardi, C. (2020). Cyberbullying victimization and non-suicidal self-injurious behavior among Chinese adolescents: School engagement as a mediator and sensation seeking as a moderator. *Frontiers in Psychology*, *11*, 1–9. https://doi.org/10.3389/fpsyg.2020.572521	Cross-sectional	1,102 adolescents aged 12 to 15	China	Non-suicidal self-injury
29	Zhu, J., Chen, Y., Su, B., & Zhang, W. (2021). Anxiety symptoms mediates the influence of cybervictimization on adolescent non-suicidal self-injury: The moderating effect of self-control. *Journal of Affective Disorders*, *285*, 144–151. https://doi.org/10.1016/j.jad.2021.01.004	Longitudinal (six months gap between time points)	1,987 adolescents aged 10 to 14	China	Non-suicidal self-injury
30	Zhu, Y., Li, W., O'Brien, J. E., & Liu, T. (2021). Parent–child attachment moderates the associations between cyberbullying victimization and adolescents' health/mental health problems: An exploration of cyberbullying victimization among Chinese adolescents. *Journal of Interpersonal Violence*, *36*(17–18), NP9272–NP9298. https://doi.org/10.1177/0886260519854559	Cross-sectional	3,232 adolescents aged 15 to 17	China	Overall health, depressive symptoms, posttraumatic stress disorder (PTSD), problem drinking, cigarette smoking, and gambling

Table 4

Frequency of Outcomes Measured

	Outcomes	Sum
Psychological and behavioral	Overall health	1
Psychological	Overall internalizing problems	2
	Depression	9
	Suicidality	6
	Anxiety	5
	Stress	2
	Self-esteem	2
	Emotional symptoms (e.g. unhappy, scared, worry)	2
	Fatalism	1
	PTSD	1
	Life satisfaction	1
	Presence of meaning in life	1
Behavioral	Overall externalizing problems	1
	Drug misuse	1
	Gambling	1
	Cigarette smoking	2
	Drinking	2
	Internet addiction	2
	Coping responses	2
	Non-suicidal self-injury	2
	Self-harm	1
	Conduct disorder	1
	Oppositional defiant disorder	1
	Sleep problems	1
	Online behavioral problems	1
	Cyberbullying	1
	Sexting	1
School problems	Subjective well-being in school	1
	Overall school and peer problems	1
	Student engagement	1
	Student connectedness	1
	Academic performance	1
	Truancy	1

2.3.3 Summary

From this review, it was found that studies on cybervictimization outcomes were mainly focused on psychological problems, particularly depression. From Table 4, it would be easier to see which outcomes were given more attention among researchers. The most reported cybervictimization outcomes were depression ($n = 9$), suicidality ($n = 6$) and anxiety ($n = 5$). Other reported outcomes included psychological problems (stress, emotional symptoms) and behavioral problems (substance misuse, non-suicidal self-injury). Besides, school-related issues such as engagement or connectedness with students were reported. Few studies had also examined coping-related responses (Lee & Chun, 2020; Przybylski, 2019),

Internet addiction (Wachs et al., 2020; Wang et al., 2020), and self-esteem (Moon & Mello, 2021; Wachs et al., 2020) after adolescents experienced cybervictimization. As such, cybervictimization might be a risk factor for depression among adolescents. Thus, cybervictimization and its association with depression should be examined in the local context.
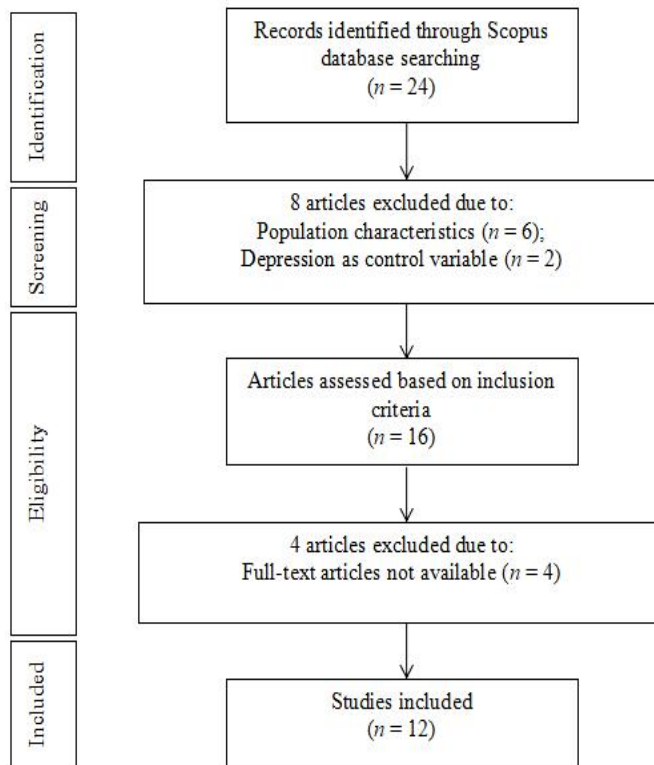
2.4 Cybervictimization and Depression

2.4.1 Study Selection Process

Depression as an outcome variable was more specifically examined in this study because it was the commonly reported negative outcome of cybervictimization, as shown previously. This was supported by a review of longitudinal data collected from children and adolescents sample, which indicated that internalizing symptoms including depression were identified as one of the most common adverse outcomes of cybervictimization (Camerini et al., 2020).

The articles were selected by using keywords, namely cybervictimization, cyberbullying victimization, depression or depressive, adolescent, adolescents, and adolescence. Other inclusion criteria were English-written psychological articles published between 2017 and 2021. Referring to Figure 4, the initial results of the Scopus database search found 24 articles that fulfilled the inclusion criteria, but eight articles were further excluded due to depression was not the outcome variable, and population characteristics for instance non-adolescent populations. After that, four articles were excluded as the full-text articles were not available to be viewed or downloaded. Finally, 12 articles were included in the review.

Figure 4

Flow Diagram of the Study Selection Process on Cybervictimization and Depression

2.4.2 Overview of Articles

Based on the summary table of the findings from various articles in Table 5, there were three key points found, namely the likelihood for a bidirectional relationship between cybervictimization and depression, the positive association between cybervictimization and depression, as well as this association could be mediated or moderated by other factors.

Bidirectional Relationship

Firstly, there was the possibility for a bidirectional relationship between cybervictimization and depression. For instance, Gao et al.'s (2021) study involved a sample of 2,407 adolescents aged 11 to 17 in China. Cybervictimization at Time 1 predicted depression at Time 2, over a year gap. There was a bidirectional relationship, as shown by

depression at Time 1 predicted cybervictimization at Time 2. However, this bidirectional relationship between cybervictimization and depression was non-significant for females.

This bidirectional relationship between cybervictimization and depression was also reported in other studies. Chu et al. (2019) examined 661 adolescents between 11 and 15 years old at the initial time point of study in China, with six months gap between the time points. Cybervictimization was not a predictor of depression, however the opposite pathway whereby depression at Time 2 significantly predicted cybervictimization at Time 3 was present among males instead of females. A similar result was found by Van Zalk and Van Zalk (2019) who assessed data of 501 adolescents between the age of 13 and 15 in Sweden, with eight months gap between the time points. Depression at Time 1 predicted cybervictimization at Time 2 only among males.

Furthermore, Boer et al. (2021) examined the responses of 2,109 Dutch adolescents initially between 10 and 16 years old, with a year gap between the time points. In contrast with the results found by Chu et al. (2019) and Gao et al. (2021), Boer et al. (2021) found that cybervictimization did not predict increased depression after one year, and neither vice versa. It was explained that participants experiencing increased cybervictimization might also report increased depression within the same year, but this effect might not persist for over a year time. It was assumed that the predictive nature of cybervictimization related to depression might depend on the time gap investigated in the longitudinal study.

Positive Association

Secondly, it was also generally supported that there was a positive association between cybervictimization and depression across different studies. Iranzo et al. (2019) found a strong association between cybervictimization and depression among 1,062 adolescents between the age of 12 and 18 in Spain. Similarly, Chen et al. (2018) examining 18,341

students aged between 15 and 17 in China indicated that cybervictims had the highest rate of depression when compared with those who were not cybervictimized. There was also a significant direct relationship between cybervictimization and depression found in Chu et al.'s (2018) study which included a sample of 489 adolescents between the age of 11 and 15 in China.

Other studies further documented the results that the more severe the cybervictimization was, the higher the depression level among adolescents. Santos et al. (2021) conducted a cross-sectional study that involved a sample of 2,108 adolescents aged 12 to 17 in Spain. It was found that higher levels of cybervictimization were associated with higher levels of depression. Faura-Garcia et al. (2021) whose study consisted of 742 adolescents between 12 and 17 years old in Spain also indicated that frequent cybervictimization was associated with depression. Similarly, Wang et al. (2020) examined the responses of 1,006 adolescents aged between 12 and 16 in China, supporting that cybervictimization positively predicted depression.

In addition, Mallik and Radwan (2020) examined the possible associations between cybervictimization and psychiatric disorders among 276 students aged between 14 and 17 in Bangladesh, reporting that cybervictims were more likely than non-cybervictims to report any emotional and behavioral disorders, with Major Depressive Disorder as the most reported disorders. However, McLoughlin et al. (2019) who assessed a sample of 229 adolescents aged between 12 and 17 in Australia found that cybervictims reported only moderate levels of depression, but there was no significant difference in levels of depression among cybervictims, cyberbully-victims and those not involved in cyberbullying.

Mediator or Moderator in the Association

Thirdly, few studies also included the mediation or moderation process to further explain the relationship between cybervictimization and depression. The role of a mediator between cybervictimization and depression was considered in three studies. It was shown that peer pressure was a significant mediator between cybervictimization at Time 1 and depression at Time 2 (Gao et al., 2021). Besides, social connectedness partially mediated the relationship between frequent cybervictimization and depression. In other words, adolescents who were more socially connected with others were less likely to report depression after experiencing cybervictimization (McLoughlin et al., 2019). Similarly, hopelessness was a partial mediator in this relationship, but the mediation effect size was weaker than the direct effect of cybervictimization on depression, probably because cybervictimization was linked with negative emotions in different ways in the short-term and long-term run (Chu et al., 2018), which was in line with the assumptions by Boer et al. (2021).

Besides, the role of the moderator in the relationship between cybervictimization and depression was examined in five studies. Demographic background (such as family socioeconomic status), internal resources (such as resilience and schemas), and external resources (such as social support) were examples of moderators being considered in different studies. Demographic factors showed a different buffering effect, for instance gender, but not family socioeconomic status and perceived economic stress, moderated the relationship between cybervictimization and depression (Gao et al., 2021). Cybervictimization was positively associated with depression among the participants with lower levels of resilience (Santos et al., 2021), lower levels of self-compassionate (Chu et al., 2018), and higher levels of non-judging (avoid evaluating own experience now in the present moment) (Faura-Garcia et al., 2021). Those with more positive and supportive peer relationships reported a lower level of depression when experiencing mild cybervictimization, but such buffering role might

not be able to reduce depression in the face of more severe cybervictimization (Wang et al., 2020).

Table 5

Summary of the Articles on Cybervictimization and Depression

	Reference	Research Design	Measurements		Sample	Location	Findings
			Depression	Cybervictimization			
1	Boer, M., Stevens, G. W. J. M., Finkenauer, C., de Looze, M. E., & van den Eijnden, R. J. J. M. (2021). Social media use intensity, social media use problems, and mental health among adolescents: Investigating directionality and mediating processes. *Computers in Human Behavior*, *116*, 1–17. https://doi.org/10.1016/j.chb.2020.106645	Longitudinal design	Depressive Mood List (Kandel & Davies, 1982)	Multidimensional Online Peer Victimization Scale (Sumter et al., 2015)	2,109 adolescents aged 10 to 16 at the initial time point of study	Netherlands	-Cybervictimization did not predict increased depression after one year, and neither vice versa. -When the participants experienced increased cybervictimization, they might also experience increased depression within the same year, but this effect might not persist for a year.
2	Chen, Q., Lo, C. K. M., Zhu, Y., Cheung, A., Chan, K. L., & Ip, P. (2018). Family poly-victimization and cyberbullying among adolescents in a Chinese school sample. *Child Abuse & Neglect*, *77*, 180–187. https://doi.org/10.1016/j.chiabu.2018.01.015	Cross-sectional	Chinese version of the Beck Depression Inventory II (Leung, 2001)	Chinese version of the Juvenile Victimization Questionnaire (JVQ) (Finkelhor et al., 2011) and the Relational Aggression Scale (RAS) (Crick & Grotpeter, 1995)	18,341 adolescents aged 15 to 17	China	-The participants having experiences of cybervictimization reported the highest rate of depression when compared with those who were not cybervictimized.
3	Chu, X.-W., Fan, C.-Y., Lian, S.-L., & Zhou, Z.-K. (2019). Does bullying victimization really influence adolescents' psychosocial problems? A three-wave longitudinal study in China. *Journal of Affective Disorders*, *246*, 603–610. https://doi.org/10.1016/j.jad.2018.12.103	Longitudinal design	Chinese version of the Depression Anxiety Stress Scale (DASS–21) (Chan et al., 2012)	Victimization subscale of Chinese version of the Revised Cyberbullying Inventory (Chu & Fan, 2017)	661 adolescents aged 11 to 15 at the initial time point of study	China	-The pathway from depression at Time 2 to cybervictimization at Time 3 was significant among males, but not significant among females.
4	Chu, X.-W., Fan, C.-Y., Liu, Q.-Q., & Zhou, Z.-K. (2018). Cyberbullying victimization and symptoms of depression and anxiety among Chinese adolescents: Examining hopelessness as a mediator and self-compassion as a moderator. *Computers in Human Behavior*, *86*, 377–386. https://doi.org/10.1016/j.chb.2018.04.039	Cross-sectional	Chinese version (Wang et al., 1999) of Center for Epidemiologic Studies Depression Scale (Radloff, 1977)	Chinese version (Zhou et al., 2013) of the cyberbullying victimization subscale of the Cyberbullying Inventory (Erdur-Baker & Kavşut, 2007)	489 adolescents aged 11 to 15	China	-There was a significant direct relationship between cybervictimization and depression, indicating that hopelessness was a partial mediator in this relationship. -Cybervictimization was associated with depression when the participants had low self-compassionate.
5	Faura-Garcia, J., Orue, I., & Calvete, E. (2021). Cyberbullying victimization and nonsuicidal self-injury in adolescents: The role of maladaptive schemas and dispositional mindfulness. *Child Abuse & Neglect*, *118*, 1–11. https://doi.org/10.1016/j.chiabu.2021.105135	Cross-sectional	Center for Epidemiologic Studies-Depression Scale (CES-D; Radloff, 1977)	Cyberbullying Questionnaire (CBQ; Calvete et al., 2010; Gámez-Guadix et al., 2014)	742 adolescents aged 12 to 17	Spain	-More frequent cybervictimization was associated with depression. -Non-judging (avoid evaluating own experience at the present time) moderated the relationship between cybervictimization and depression, this relationship was stronger especially when the level of non-judging was high.
6	Gao, L., Liu, J., Yang, J., & Wang, X. (2021). Longitudinal relationships among cybervictimization, peer pressure, and adolescents' depressive symptoms. *Journal of Affective Disorders*, *286*, 1–9. https://doi.org/10.1016/j.jad.2021.02.049	Longitudinal design	The Center for Epidemiologic Studies Depression Scale	Cybervictimization scale (Erdur & Kavsut, 2007)	2,407 adolescents aged 11 to 16	China	-Cybervictimization was positively associated with depression at both time points. -Cybervictimization at Time 1 positively predicted depression at Time 2. -Depression at Time 1 positively predicted cybervictimization at Time 2. -For males, the relationship between cybervictimization at Time 1 and depression at Time 2 was stronger. For females, there was no significant bidirectional relationship between cybervictimization and depression.

7	Iranzo, B., Buelga, S., Cava, M.-J., & Ortega-Barón, J. (2019). Cyberbullying, psychosocial adjustment, and suicidal ideation in adolescence. *Psychosocial Intervention*, 28 (2), 75–81. https://doi.org/10.5093/pi2019a5	Cross-sectional	Depressive Symptomatology Scale (Herrero & Meneses, 2006)	Adolescent Victimization through Mobile Phone and Internet Scale (CYBVIC; Buelga et al., 2010; Buelga et al., 2012)	1,062 adolescents aged 12 to 18	Spain	-There was a strong association between cybervictimization and depression. -There was a significant indirect effect between cybervictimization and suicidal ideation through depression.
8	Mallik, C. I., & Radwan, R. B. (2020). Adolescent victims of cyberbullying in Bangladesh- prevalence and relationship with psychiatric disorders. *Asian Journal of Psychiatry*, 48, 1–4. https://doi.org/10.1016/j.ajp.2019.101893	Cross-sectional	Bangla version of the Strengths and Difficulties Questionnaire (Mullick & Goodman, 2001) and the Development and Well-Being Assessment questionnaire used for interview	Cyber victim and bullying scale (Cetin et al., 2011)	276 adolescents aged 14 to 17	Bangladesh	-There was a significant different between cybervictims and non-cybervictims in reporting psychiatric problems, as the results showed that cybervictims were more likely to report any psychiatric disorders when compared with non-cybervictims. -Among all the emotional and behavioral disorders examined in this study, Major Depressive Disorder was the most reported psychiatric disorders.
9	McLoughlin, L. T., Spears, B. A., Taddeo, C. M., & Hermens, D. F. (2019). Remaining connected in the face of cyberbullying: Why social connectedness is important for mental health. *Psychology in the Schools*, 56 (6), 945–958. https://doi.org/10.1002/pits.22232	Cross-sectional	The Depression, Anxiety, and Stress Scale (DASS21; Lovibond & Lovibond, 1995)	Safe and Well Online (Spears, Taddeo, Barnes, Collin, et al., 2015; Spears, Taddeo, Barnes, Scrimgeour, et al. 2015; Spears et al. 2016) survey originally from Smith et al. (2008), and a Cyberbullying Scale adapted from Cross et al. (2009)	229 adolescents aged 12 to 17	Australia	-Cybervictims reported moderate levels of depression, anxiety and stress, but it was not significantly different from cyberbully-victims and non-involved group.
10	Santos, D., Mateos-Pérez, E., Cantero, M., & Gámez-Guadix, M. (2021). Cyberbullying in adolescents: Resilience as a protective factor of mental health outcomes. *Cyberpsychology, Behavior, and Social Networking*, 24 (6), 414–420. https://doi.org/10.1089/cyber.2020.0337	Cross-sectional	Depression subscale of the Spanish version of the Brief Symptom Inventory (Andreu et al., 2008; Derogatis & Melisaratos, 1983; Galdón et al., 2008)	Short version of the victimization subscale of the Cyberbullying Questionnaire (Calvete et al., 2010; Gámez-Guadix et al., 2014)	2,108 adolescents aged 12 to 17	Spain	-Those with more experiences of cybervictimization have more depression symptoms. -The interaction effect of resilience and cybervictimization was significant in predicting depression. -Among those with lower levels of resilience, cybervictimization was positively associated with more depression symptoms, but the strength of association reduced as resilience increased.
11	Van Zalk, N., & Van Zalk, M. (2019). Longitudinal links between adolescent social anxiety and depressive symptoms: Testing the mediational effects of cybervictimization. *Child Psychiatry & Human Development*, 50 (2), 186–197. https://doi.org/10.1007/s10578-018-0829-1	Longitudinal design	Shortened version of the Child Depression Scale from the Center for Epidemiological Studies (the CESD-10; Radloff, 1977)	Adapted Olweus Bully/Victim Questionnaire (Katzer et al., 2009) to fit in online social contexts	501 adolescents aged 13 to 15	Sweden	-Depression at Time 1 predicted increased cybervictimization at Time 2 among males, but not among females.
12	Wang, Z., Xie, Q., Xin, M., Wei, C., Yu, C., Zhen, S., Liu, S., Wang, J., & Zhang, W. (2020). Cybervictimization, depression, and adolescent internet addiction: The moderating effect of prosocial peer affiliation. *Frontiers in Psychology*, 11, 1–9. https://doi.org/10.3389/fpsyg.2020.572486	Cross-sectional	Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977)	Cyberbullying victimization scale (Erdur-Baker & Kavsut, 2007)	1,006 adolescents aged 12 to 16	China	-Cybervictimization predicted increased depression. -Those who had more prosocial peer affiliation (positive and supportive relationships with peer) reported lower level of depression than those who had less prosocial peer affiliation, in particular when experiencing mild cybervictimization.

2.4.3 Summary

In general, the studies reviewed showed that cybervictimization was positively associated with depression. It was also suggested that the association between cybervictimization and depression could be mediated or moderated by psychological factors. The results indicated that adolescents who faced cybervictimization might not always develop depression, and thus the individual differences in terms of personality could be included to explore the relationship between cybervictimization and depression.

2.5 Sense of Coherence as Moderator

2.5.1 Study Selection Process

Sense of coherence was considered as the personality disposition which was relatively stable and could assist in allocating resources to deal with life stressors and adapt to changing situations (Konaszewski et al., 2021). Sense of coherence was selected as the personality variable to examine the individual differences because it could predict health outcomes above the Big Five personality traits (Grevenstein & Bluemke, 2015), probably due to the meaningfulness dimension which was not covered in other personality traits (Grevenstein et al., 2016). Eriksson and Lindström (2005) wrote that sense of coherence reflected the capacity in responding to stressful events, and individuals with high sense of coherence could utilize generalized resistance resources (available resources) when they face potential stressors (Super et al., 2016), which was the reason why certain individuals had higher possibility to maintain happiness and well-being (García-Moya, Moreno, et al., 2014). For instance, Moksnes et al. (2012) collected survey data from 1,209 adolescents between the age of 13 and 18 in Norway, and found that there was a negative association between sense of coherence and depression. They might also have higher confidence levels regarding their

abilities to cope effectively in various events, and this probably led to effective responses in dealing with stressors (García-Moya, Suominen, et al., 2014).

When investigating the relationship between victimization and health, the role of sense of coherence in understanding an individual's capacity to deal with stressors was crucial (García-Moya, Suominen, et al., 2014). According to Braun-Lewensohn et al. (2017, p. 134), sense of coherence might moderate stress experiences in adolescents, for example stressors such as cyberbullying (Nixon, 2014). This might support that there was an indirect link between cybervictimization, sense of coherence, and depression.

As seen from Appendix E, the articles were initially selected for review by using keywords, namely cybervictimization, cyberbullying victimization, sense of coherence, salutogenic, depression, and depressive. However, there were zero results found in the Scopus database (refer to Appendix E). Next, the scope of search was widened by inserting keywords, namely sense of coherence, salutogenic, moderator, moderating, and English-written psychological articles published between 2017 and 2021. However, the results found were limited, with a total of 12 articles (refer to Appendix F). Thus, at last, the year of publication was searched up to the latest ten years, ranging from 2012 to 2021, with a total of 26 articles found in the Scopus database (refer to Appendix G). Among these 26 articles, only one focused on the adolescent sample. Due to the limited number of studies examining adolescents sample, other age groups were therefore included in this review.

Referring to Figure 5, the results of the Scopus database search found 26 articles that fulfilled the inclusion criteria, but 18 articles were further excluded due to sense of coherence was not the moderator. After that, two articles were excluded as the full-text articles were not available to be viewed or downloaded. Finally, six articles were included in the review.

Figure 5

Flow Diagram of the Study Selection Process on Sense of Coherence as Moderator
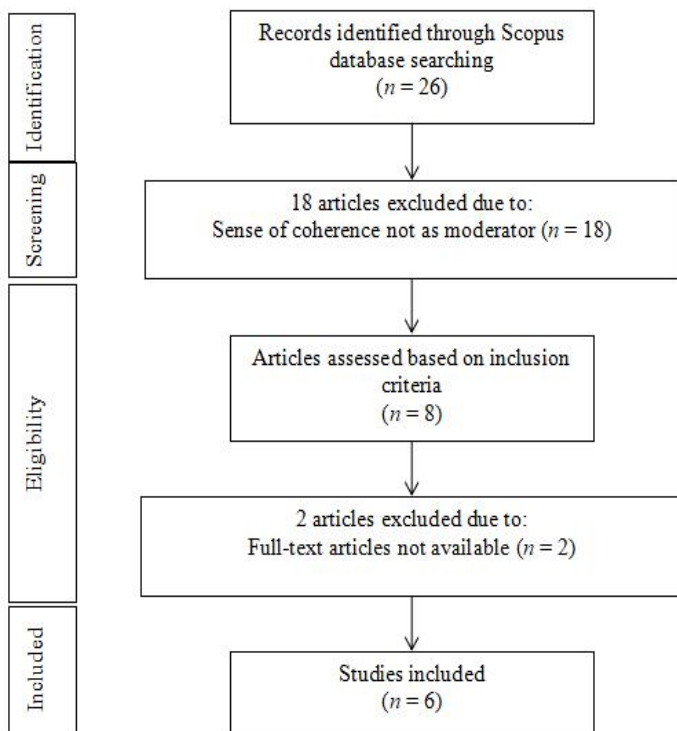
2.5.2 Overview of Articles

Based on the summary table of the findings from various articles in Table 6, some studies found a significant moderating effect of sense of coherence, whereas some reported a non-significant moderating effect of sense of coherence.

Significant Moderating Effect

From Table 6, most studies reported that sense of coherence was a significant moderator in the relationship between the stressors and psychological outcomes. For instance, Noyman-Veksler et al. (2015) recruited 96 women with mean age of 28.7 years in Israel, who experienced the stressor of delivering infants. Sense of coherence predicted a decrease in depression after six weeks. It also supported that sense of coherence could act as a buffer against depression regardless of the modes of delivery, whereby those with a high sense of

coherence coped better after delivering an infant when compared with those with a low sense of coherence.

Besides, Barni et al. (2020) assessed the data of 2,784 participants aged between 18 and 85 years in Italy, particularly focusing on the context of COVID-19. There was a positive association between sense of coherence and well-being. Two significant moderation effects of sense of coherence were found in relation to the effects of illness experiences on well-being. Firstly, those with a low sense of coherence who knew at least a person who was diagnosed with COVID-19 would report lower well-being. In contrast, among those with a high sense of coherence, there were no differences in the effect on well-being regardless of whether they knew or did not know anyone who was being diagnosed with COVID-19. Secondly, the strength of the negative relationship between fear of being diagnosed with COVID-19 and well-being was slightly stronger among those with a high sense of coherence when compared with those with a low sense of coherence.

Furthermore, Moksnes et al.'s (2014) study consisted of 1,183 adolescents aged between 13 and 18 in Mid-Norway. There was a significant negative association between sense of coherence and depression in both gender groups, after controlling for age and stress. There was a significant interaction effect between stress from peer pressure and sense of coherence to depression in both gender groups. The effect of stress from peer pressure on depression was weaker among those with a high sense of coherence in comparison with those reporting a low sense of coherence.

Non-significant Moderating Effect

On the other hand, the studies below found that sense of coherence was not a significant moderator. For example, Koskinen et al. (2015) recruited 213 adults with mean age of 24.1 years in Finland and found that there was a negative association between sense of

coherence and psychological outcomes, but the moderating effect of sense of coherence was non-significant between perceived racial or ethnic discrimination and psychological distress. It was explained that probably because the strength of the direct relationship between sense of coherence and psychological distress was stronger than the interaction effect.

Similarly, Ponizovsky-Bergelson et al. (2015) assessed the data of 220 young adult immigrants aged between 25 and 34 who moved from the former Soviet Union to Israel. Sense of coherence was the strongest predictor of psychological adjustment, including reduced psychological symptoms. However, sense of coherence was not a significant moderator in the relationship between filial responsibility and psychological adjustment. This might probably due to the stronger direct effect of sense of coherence on psychological adjustment in the context of migration experiences.

Mixed Moderating Effect

Lastly, there were mixed findings regarding the moderating role of sense of coherence. Johnston et al. (2013) who examined 632 working adults aged between 18 and 64 in South Africa found a significant negative relationship between sense of coherence and work stress, showing that those with a high sense of coherence experienced less burnout. However, the moderating effect of sense of coherence depends on the types of work stressors. Sense of coherence moderated the relationship between job demands and burnout, but not on job control and social support. Among those with a low sense of coherence, there was a linear relationship between job demands and burnout, suggesting a steeper increase in burnout when there was an increase in job demands. In contrast, among those with a high sense of coherence, the relationship was slightly curvilinear, whereby an initial increase in job demands might lead to a decrease in burnout, and only a high level of job demands would

increase burnout. This might suggest that levels of stressors could influence the buffering role of sense of coherence, particularly for those with a high sense of coherence.

Table 6

Summary of the Articles on Sense of Coherence as Moderator

	Reference	Research Design	Measurements		Sample	Location	Findings
			Sense of Coherence	Outcomes			
1	Barni, D., Danioni, F., Canzi, E., Ferrari, L., Ranieri, S., Lanz, M., Iafrate, R., Regalia, C., & Rosnati, R. (2020). Facing the COVID-19 pandemic: The role of sense of coherence. *Frontiers in Psychology*, 11, 1–7. https://doi.org/10.3389/fpsyg.2020.578440	Cross-sectional	The Italian version of the 11-item Sense of Coherence Scale (Antonovsky, 1987; Barni & Tagliabue, 2005)	Mental Component Summary of the Short-Form Health Survey (SF-12; Italian version by Apolone & Mosconi, 1998; Apolone et al., 2001)	2,784 adults aged 18 to 85	Italy	-There was a positive association between sense of coherence and well-being. -Two significant moderation effects of sense of coherence were found in relation with the effects of illness experiences on well-being. -Among those with low sense of coherence, knowing at least a person who was diagnosed with COVID-19 would report lower well-being. In contrast, among those with high sense of coherence, there was no differences in the effect on well-being regardless of whether they knew or did not know anyone who was being diagnosed with COVID-19. -Among those with high sense of coherence, the strength of negative relationship between fear of contracting COVID-19 and well-being was slightly stronger when compared with those with low sense of coherence.
2	Johnston, C. S., De Bruin, G. P., Geldenhuys, M., Györkös, C., Massoudi, K., & Rossier, J. (2013). Sense of coherence and job characteristics in predicting burnout in a South African sample. *SA Journal of Industrial Psychology*, 39(1), 1–9. https://doi.org/10.4102/sajip.v39i1.1096	Cross-sectional	Sense of Coherence Questionnaire (SOC-13) (Antonovsky, 1987; 1993)	Maslach Burnout Inventory-General Survey (MBI-GS) (Maslach & Jackson, 1986)	632 working adults aged 18 to 64	South Africa	-There was a significant negative relationship between sense of coherence and work stress, showing that those with high sense of coherence experienced less burnout. -Sense of coherence was found to be a moderator in the relationship between job demands and burnout, but not on job control and social support. -Among those with low sense of coherence, there was a linear relationship between job demands and burnout, suggesting a steeper increase in burnout when there was an increase in job demands. -In contrast, among those with high sense of coherence, the relationship was slightly curvilinear, whereby initial increase of job demands might lead to decrease in burnout, and only high level of job demands would increase burnout.
3	Koskinen, M., Elovainio, M., Raaska, H., Sinkkonen, J., Matomäki, J., & Lapinleimu, H. (2015). Perceived racial/ethnic discrimination and psychological outcomes among adult international adoptees in Finland: Moderating effects of social support and sense of coherence. *American Journal of Orthopsychiatry*, 85(6), 550–564. https://doi.org/10.1037/ort0000099	Cross-sectional	12-item Sense of coherence (SOC; Antonovsky, 1987)	General Health questionnaire (GHQ; Goldberg, 1972)	213 adults with the mean age of 24.1	Finland	-There was a negative association between sense of coherence and psychological outcomes. -The moderating effect of sense of coherence was non-significant between perceived racial or ethnic discrimination and psychological distress.

4	Moksnes, U. K., Espnes, G. A., & Haugan, G. (2014). Stress, sense of coherence and emotional symptoms in adolescents. *Psychology & Health*, 29(1), 32–49. https://doi.org/10.1080/08870446.2013.822868	Cross-sectional	Norwegian 13-item Orientation to Life Questionnaire (Antonovsky, 1987)	Depression scale (Byrne et al., 2007)	1,183 adolescents aged 13 to 18	Mid-Norway	-There was a significant negative association between sense of coherence and depression in both gender groups, after controlling for age and stress. -There was a significant interaction effect between stress from peer pressure and sense of coherence to depression in both gender groups. The effect of stress from peer pressure on depression was weaker among those with high sense of coherence in comparison with low sense of coherence.
5	Noyman-Veksler, G., Herishanu-Gilutz, S., Kofman, O., Holchberg, G., & Shahar, G. (2015). Post-natal psychopathology and bonding with the infant among first-time mothers undergoing a caesarian section and vaginal delivery: Sense of coherence and social support as moderators. *Psychology & Health*, 30(4), 441–455. https://doi.org/10.1080/08870446.2014.977281	Longitudinal design (six weeks gap between time points)	Sense of coherence (SOC-13; Antonovsky, 1979)	Edinburgh post-natal depression questionnaire (Hebrew version: Glaser & Barel, 1999)	96 women with the mean age of 28.7	Israel	-Sense of coherence predicted a decrease in depression over the time point. -Sense of coherence could buffer against depression regardless of the modes of delivery, whereby those with high sense of coherence cope better after delivering infant when compared with those with low sense of coherence.
6	Ponizovsky-Bergelson, Y., Kurman, J., & Roer-Strier, D. (2015). Adjustment enhancer or moderator? The role of resilience in postmigration filial responsibility. *Journal of Family Psychology*, 29(3), 438–446. https://doi.org/10.1037/fam0000080	Cross-sectional	The 29-item Sense of Coherence scale (Antonovsky, 1987)	Adapted version of the Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983)	220 young adult immigrants aged 25 to 34	Israel	-Sense of coherence was the strongest predictor of psychological adjustment (reduced psychological symptoms, increased satisfaction with life, self-efficacy, and general life functioning). -Sense of coherence was not a significant moderator in the relationship between filial responsibility and psychological adjustment.

2.5.3 Summary

In overall, the majority of studies focused on age groups other than adolescents and supported that sense of coherence could act as the moderator in the relationship between stressors and well-being or psychological outcomes. The studies in this review examined various stressors with sense of coherence as the moderator, such as illness (Barni et al., 2020), discrimination (Koskinen et al., 2015), life events after the migration (Ponizovsky-Bergelson et al., 2015), peer pressure (Moksnes et al., 2014) and work stress (Johnston et al., 2013). As such, cybervictimization as one of the uncontrollable stressors (Quintana-Orts et al., 2022) might also be examined with its relationship with sense of coherence.

From the review, it could be assumed that the different types of stressors might influence the moderating role of sense of coherence, and therefore it was necessary to examine sense of coherence among those who experienced cybervictimization to fill in the literature gap.

The literature gap included the age of sample groups, the lack of studies focusing on cybervictimization as the stressor, and mixed findings on the moderating effect of sense of coherence. Firstly, from the scoping review, only one among six studies focused on the adolescent samples whereas others were adult samples. Sense of coherence gradually developed throughout the experiences in childhood and adolescence, while being more aware of their external or internal resources at the late adolescence stage after handling several challenges to strive for independence, including leaving their parents and going for higher education or work (Honkinen et al., 2008). As such, the moderating role of sense of coherence might vary throughout the developmental stage as sense of coherence was still developing in the adolescence stage when compared with adults having a more stable sense of coherence, and probably higher confidence and more resources to deal with stressors and leading to better health outcomes.

Secondly, no search results were found when searching in the Scopus database for keywords including cybervictimization, sense of coherence, and depression. After broadening the search scope and focusing on the moderating role of sense of coherence in the scoping review, there was no study that examined cybervictimization as the stressor. Cybervictimization was an interpersonal stressor that was associated with depression among adolescents (Van Zalk & Van Zalk, 2019). Besides, sense of coherence could buffer against depression (Moksnes et al., 2014; Noyman-Veksler et al., 2015). It was therefore assumed that sense of coherence could mitigate depression among those who had experienced cybervictimization. This study might be able to serve as a reference for relevant studies in the future which also considered cybervictimization, sense of coherence, and depression.

Lastly, there are mixed findings regarding the moderating role of sense of coherence, depending on the context being studied (Moksnes & Haugan, 2015). This was shown by the results of the scoping review whereby two studies reported a non-significant moderating role of sense of coherence and four studies found that sense of coherence was a significant moderator. The explanation of such inconsistencies might be age differences or varying contexts of stressors as mentioned in the previous paragraphs, or probably because the direct effect of sense of coherence on health outcomes was stronger than the interaction effect (Koskinen et al., 2015; Ponizovsky-Bergelson et al., 2015). It was expected that the results of this study could provide support for the moderating role of sense of coherence against depression among adolescent cybervictims to fill in the literature gap.

2.6 Theoretical Background

Salutogenic Model of Health. The Salutogenic Model of Health suggests viewing individuals in a health/disease continuum at a certain point in time, and the generalized resistance resource may explain the movement toward the health end of the continuum

(Antonovsky, 1996). It is the inner capacity to create and maintain well-being and health even if facing adverse situations in life (Rajkumar, 2021). The adaptation to environment and stressors is impacted by individual and social factors which assist in overcoming challenges, preventing break down or having a disease (Rajkumar, 2021). These factors are known as generalized resistance resource, which includes knowledge, intelligence, religion or philosophy, social support, and coping strategies (Eriksson & Lindström, 2005). Generalized resistance resource is essential to promote the development of sense of coherence (Super et al., 2016). Höge and Büssing (2004) wrote that the exposure to pathogenetic variables, such as stressors, and the available resources to deal with these adverse events might determine where an individual was along the continuum of health. From this view, everyone was considered to be in a certain point between total wellness and total illness, but not grouped as being entirely healthy or diseased individuals (Eriksson, 2017). Stressors might negatively affect health temporarily, but there was a possibility that in the long run individuals could learn to manage stress and gaining experiences to handle similar life adversity in the future (Eriksson, 2017).

Sense of coherence is the central construct of the Salutogenic Model of Health, and the strengthening of sense of coherence can increase an individual's ability to have a more structured view of stressful events and to search for resources to handle the stressors (Super et al., 2016). The three components related to individuals with a high sense of coherence are: comprehensibility (the belief that challenge can be understood), manageability (the belief that coping resources are available), and meaningfulness (the wish to have the motivation to cope). Comprehensibility and manageability are cognitive aspects whereas meaningfulness is more relevant to emotions and motivation (Höge & Büssing, 2004). Among these three components, meaningfulness is essential as the lack of meaningfulness may result in decreased ability to comprehend and manage adversities (Grevenstein et al., 2016).

In a broader sense, the Salutogenic Model of Health is validated in various contexts or stressors, including workplace bullying (Nielsen et al., 2008), peer pressure (Moksnes et al., 2014), and even severe adversity such as war trauma (Veronese et al., 2013). Stressors are events that have the potential to change or disrupt psychological functioning of an adolescents (Crosswell & Lockwood, 2020). Cybervictimization was viewed as an example of stressors by studies such as Nixon (2014) and Quintana-Orts et al. (2022). Cybervictimization could be a stressor due to its repetitive, chronic and uncontrollable nature, which also evoked strong negative emotions among cybervictims (Ak et al., 2015). The features of cybervictimization, as mentioned previously in the literature review, namely the repetitive aggression acts within a prolonged period are similar to the definition of chronic stressors, which are the prolonged threats or challenges which disrupt daily living and persist for a certain period of time (Crosswell & Lockwood, 2020). Besides, stressors could possibly affected psychological aspects of an individual (Crosswell & Lockwood, 2020), similar to cybervictimization which was linked with various negative outcomes as found in the literature review previously. Therefore, it might be possible to view cybervictimization as a type of stressor. Study in recent years has also gradually acknowledged the Salutogenic Model of Health in intervention programs to prevent cybervictimization which acted as the stressor (Pyżalski et al., 2022), it is therefore expected to extend the theoretical application of the Salutogenic Model of Health with cybervictimization as the stressor and its health outcomes.

Furthermore, sense of coherence was found to predict mental health outcomes (e.g. Cohen & Dekel, 2000; Kinman, 2008; Moksnes et al., 2014). A review showed that intervention programs which aimed to strengthen sense of coherence could effectively reduce depression levels (Álvarez et al., 2021), supporting the relevance of the Salutogenic Model of

Health in this current study that examined sense of coherence and its health outcomes, particularly depression.

Sense of coherence could explain individual differences in terms of well-being (García-Moya & Morgan, 2017). The health outcomes varied depending on the individual appraisal of external and internal resources, for instance those who thought that asking for help was a burden on others might be more reluctant to seek help (Greimel et al., 2016). In line with the Salutogenic Model of Health, studies have shown that there might be an indirect mechanism via sense of coherence between stressors and health outcomes (Barni et al., 2020; Moksnes et al., 2014; Noyman-Veksler et al., 2015). Therefore, sense of coherence was examined as the moderator, which showed how the levels of sense of coherence could be linked with depression.

The Salutogenic Model of Health was chosen in this study as its emphasis is on creating and maintaining good health, instead of focusing on the causes of diseases in the traditional Pathogenic Model of Health (Bhattacharya et al., 2020). Furthermore, the Salutogenic Model of Health proposed that sense of coherence is a general coping resource that can reduce stress outcomes by influencing the cognitive and emotion appraisals of the stimuli faced (Naudé & Rothmann, 2006). This might provide a broader view on coping instead of focusing on particular types of coping strategies. It was also crucial to promote sense of coherence as it was linked with various health behaviors including a more positive lifestyle to support recovery from diseases (Bhattacharya et al., 2020).

2.7 Conceptual Framework

A conceptual framework was designed according to research objectives and research questions, and showed both predictor and outcome variables, as well as the moderator variable. These variables were linked with each other to form a test in this study.

A variable is a mediator when it shows partially or completely indirect effect, whereby independent variable influenced the mediator, then the mediator further influenced the dependent variable. On the other hand, a moderator changes the strength or direction between two variables (Breitborde et al., 2010). As this study was a cross-sectional study design, causal relationship could not be identified, and would not fit the purpose of mediation analysis to understand the mechanism of causal effect in influencing the outcome (Namazi & Namazi, 2016). Furthermore, Antonovsky suggested that sense of coherence might change the relationship between stressor and health outcomes, whereby the lower the sense of coherence, the larger the difference among those with severe and mild level of stressor in reporting health outcomes (Albertsen et al., 2001). Based on this, it was hypothesized that sense of coherence would act as the moderator in the path model.

Figure 6 below displayed the conceptual framework that emphasized the stressor, specifically cybervictimization which might influence depression levels, with sense of coherence as the moderator. This study focused on cybervictimization as the predictor variable, while depression was the outcome variable. Sense of coherence might act as the moderator variable in the relationship between cybervictimization and depression.

The data collected was analyzed using moderation analysis via SmartPLS (Ringle et al., 2015) to examine the path model from cybervictimization to depression, as well as the moderating effect of sense of coherence, which was located between cybervictimization and depression as illustrated in Figure 6.

Figure 6

Conceptual Framework Model
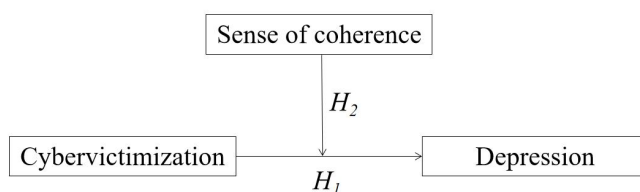
Chapter III

Method

3.1 Research Design

This study implemented a cross-sectional study design to analyze the sample data from a population. This design was applicable to be used for the collection of survey data within a large number of participants (Setia, 2016), which in particular could be applicable for reaching students on a large scale. It could also measure the predictors and outcome variables at a particular time, as well as describe the characteristics of the population (Shaughnessy et al., 2015). The variables measured, namely cybervictimization, sense of coherence, and depression levels of the participants were reported only once at the same time. This could save time and cost as no repeated measures or follow-ups were done. It might also describe the population characteristics by generalizing information about the association between cybervictimization and depression, as well as the changes in the strength of association depending on whether the level of sense of coherence was low or high.

3.2 Participants

The sample size was calculated using G*Power 3.1.9.4 (Faul et al., 2007). The statistical test chosen was the F test, linear multiple regression: Fixed model, R^2 deviation from zero. A priori power analysis was used to compute the sample size. The input parameters were: effect size, $f^2 = .16$, α err prob = .05, power (1-β err prob) = .95, number of predictors = 3 (cybervictimization, sense of coherence, cybervictimization*sense of coherence). In the moderation model, the moderator and the interaction effect (independent variable*moderator) accounted for the input for the number of predictors in G*power (Memon et al., 2020). The effect size was unknown in a priori power analysis before conducting the study and therefore Sullivan and Feinn (2012) suggested estimating the effect

size by referring to similar past studies. The effect size inserted in the input parameter of G*Power, $f^2 = .16$ was calculated by averaging the effect size of the six articles assessing moderation included in the literature review (Barni et al., 2020; Johnston et al., 2013; Koskinen et al., 2015; Moksnes et al., 2014; Noyman-Veksler et al., 2015; Ponizovsky-Bergelson et al., 2015). Although the minimum sample size required in this study was 112, more responses should be collected as there might be issues such as missing data. Thus, the target sample size was 300 participants.

Initially, 406 lower secondary school students were recruited using purposive sampling in secondary schools located in Peninsular Malaysia and East Malaysia. Purposive sampling was used to select the sample whose characteristics fit certain criteria (Etikan et al., 2016). The inclusion criteria were lower secondary school students (Form 1 to Form 3) who have access to the Internet and technological devices. After screening out 41 responses with similar scores in every item including reverse-scored items, and 8 responses with missing data throughout the whole sections in the questionnaires, the total number of students included for further data analysis was 357 (age $M = 14.34$, $SD = 0.86$).

By referring to Table 7, most participants preferred to answer using the Malay language, recording 63.9% (228 participants), whereas around 36.1% (129 participants) answered using the Chinese language. In terms of questionnaire distribution format, most participants answered the paper-and-pencil questionnaire, recording 72.3% (258 participants), whereas 27.7% (99 participants) responded to the online questionnaire, as shown in Table 7.

Table 7

Descriptive Statistics for Questionnaire Design

Language	*n*	%	Format	*n*	%
Malay	228	63.9	Online	99	27.7
Chinese	129	36.1	Paper-and-pencil	258	72.3

Besides, the descriptive statistics for participants' demographic information, namely gender, ethnicity, age, and states where they belong to, were presented in Table 8 below. There were more female participants, showing 59.7% (213 participants), when compared with male participants, which was 40.1% (143 participants), while 0.3% (1 participant) did not report their gender. In terms of ethnicity, 43.7% (156 participants) were Chinese, followed by Malay at 34.5% (123 participants), Indian at 20.2% (72 participants), other ethnicity groups at 1.1% (4 participants), while 0.6% (2 participants) did not report their ethnicity group.

Furthermore, most participants were from the Southern region of Peninsular Malaysia (Johor), recording 47.1% (168 participants), followed by the Central region of Peninsular Malaysia (Selangor and Negeri Sembilan) at 37.5% (134 participants), the Northern region of Peninsular Malaysia (Perak) at 9.8% (35 participants), and lastly from East Malaysia (Sarawak) at 5.6% (20 participants), as seen from Table 8.

Table 8

Descriptive Statistics for Participants' Demographic Information

State	*n*	%	Ethnicity	*n*	%
Southern region of Peninsular Malaysia (Johor)	168	47.1	Malay	123	34.5
Central region of Peninsular Malaysia (Selangor and Negeri Sembilan)	134	37.5	Chinese	156	43.7
Northern region of Peninsular Malaysia (Perak)	35	9.8	Indian	72	20.2
East Malaysia (Sarawak)	20	5.6	Others	4	1.1
			Missing	2	0.6

Age	*n*	%	Gender	*n*	%
13	93	26.1	Male	143	40.1
14	50	14.0	Female	213	59.7
15	214	59.9	Missing	1	0.3

3.3 Instruments

Demographic Information. Demographic information including age, gender, ethnicity, and state were collected.

Cybervictimization. Only the cybervictimization subscale of the European Cyberbullying Intervention Project Questionnaire (Brighi et al., 2012) was selected to assess cybervictimization. The subscale consists of 11 items rated on a 5-point Likert scale, ranging from "0 = never", "1 = once or twice", "2 = once or twice a month", "3 = once a week", and "4 = more than once a week". Mean scores were calculated for the cybervictimization subscale, and a higher mean score indicated more cybervictimization experience (Erreygers et

al., 2018). The items include identity theft (example item "someone hacked into my account and pretended to be me") and indirect abuse (example item "someone spread rumors about me on the Internet") (Del Rey et al., 2012). The Cronbach's alpha value was .97 (Del Rey et al., 2015).

Sense of Coherence. The 13-item Sense of Coherence scale (Antonovsky, as cited in Feldt & Rasku, 1998) was utilized to measure the sense of coherence. An example of item is "How often do you have the feeling that there's little meaning in the things you do in your daily life?". The items are rated on a 7-point Likert scale, for example, ranging from "1 = very often" to "7 = very seldom or never". Among the items, five of them are scored reversely. A higher mean score indicated a higher level of sense of coherence (Grevenstein & Bluemke, 2022). The Cronbach's alpha value was .80 (Naaldenberg et al., 2011).

Depression. The Short Mood and Feelings Questionnaire (Angold et al., 1995) consists of 13 items that examine the affective and cognitive symptoms of depression. An example of item is "I felt miserable or unhappy". The items are rated on a 3-point Likert scale, reporting the statement as "0 = not true", "1 = sometimes true", or "2 = true" over the past two weeks, with a maximum total score of 26. A higher mean score indicated a higher level of depression (Nesi & Prinstein, 2015). The Cronbach's alpha value was .85 (Angold et al., 1995).

3.4 Back Translation Process

The translation into local languages, namely Malay language and Chinese language would be convenient for participants whose mother tongue was not English to answer the questionnaires, as suggested by Sperber (2004). The existing questionnaires already having local language versions were selected for data collection, namely the Chinese Short Mood and Feelings Questionnaire (Angold et al., 1995) translated by He and Shi (B. Small, personal

communication, April 16, 2020), and the Chinese Sense of Coherence scale (Antonovsky, as cited in Feldt & Rasku, 1998) was adapted from Zhan (2019). Besides these two existing questionnaires with local languages, those without Malay language or Chinese language were translated using the back translation method (World Health Organization, 2016).

Firstly, the original questionnaires available in English were translated into Malay language and Chinese language. Next, the Malay language and Chinese language versions were translated back into English by the researcher who was blinded to the original questionnaires. Finally, both the original English version and back-translation versions were compared and the researchers held discussions to revise the items until a consensus was reached among the researchers.

3.5 Research Procedures

A pilot study was conducted from November 2020 to December 2020, which aimed to test whether the measurements were suitable for use in this study context. The data for the pilot study was collected via the distribution of Google form link, recording a total of 30 responses. The Cronbach alpha was .81 for cybervictimization, .88 for depression, and .74 for sense of coherence. Reliability analysis showed an acceptable range, which were above .60.Since the pilot study generally supported the reliabilities of the measurements, these measurements were included in the final questionnaire and distributed for actual data collection. The period for actual data collection was from January 2021 to July 2021.

Before the data collection, approvals were obtained from the Scientific and Ethical Review Committee of the university (U/SERC/128/2020) and the Ministry of Education [KPM.600-3/2/3-eras(8977)] to conduct the study. Next, the schools were selected based on the recommendations by contact persons or selected randomly from the list of schools found on the Ministry of Education website. The selected school principals were contacted to obtain

permission to conduct the survey in their schools. After that, the school principals would assign contact teachers or school counselors to assist with the distribution of the survey. A briefing that included details of the study, such as the purpose of the study and inclusion criteria of students would be provided to the teachers. The inclusion criteria were lower secondary school students (Form 1 to Form 3) who have access to the Internet and technological devices. The sample was collected from the northern, central, and southern regions of Peninsular Malaysia as well as in East Malaysia. Only one data collection method was used for particular classroom grades in a school (either paper-and-pencil questionnaire or online questionnaire, to avoid multiple responses from the same participant).

There were two methods to collect the data, namely paper-and-pencil questionnaire survey and online Google form questionnaire survey. The paper-and-pencil questionnaire was used when the students were attending physical classes in schools before the implementation of a stricter movement control order. The questionnaire was distributed to participants based on the decision of the schools, either it was distributed and collected by researchers or by teachers assigned by the schools. Before distributing the questionnaire, the parent consent form was given to the parent or guardians of the participants as they were below the age of 18 years old to decide on whether to participate in the survey or otherwise. Only the students with the signed parent consent form were recruited for the study. Participants were also given the informed consent form containing the details of this study, including the purpose of the study, rights of withdrawal, privacy and confidentiality issues. Participants were briefed about these details and they were given assurance in terms of the protection of private information and data provided. After deciding to take part in this study, participants were asked to choose either the Malay or Chinese version of the questionnaire and to complete the questionnaires within the stipulated time, estimated to be between 20 and 30 minutes.

The first page of the questionnaire was the information sheet containing details of the study, the second page was the parent consent form, and the third page was the informed consent form. The fourth page contained questions on demographic information, including age and gender. Three scales were used in this study: the European Cyberbullying Intervention Project Questionnaire (Brighi et al., 2012), the Sense of Coherence scale (Antonovsky, as cited in Feldt & Rasku, 1998), and the Short Mood and Feelings Questionnaire (Angold et al., 1995).

During the period when students were attending online classes at home, the online questionnaire was distributed to reach out to them. The link was shared via Whatsapp or email to the teachers who further assisted to distribute the link to students in the class group chats. Parents were in the group chats since the students are minors, and parents could monitor the learning progress or be informed of any school notice and announcements. Next, a briefing containing details of the study and inclusion criteria of students was provided to the teachers. Both language versions of the questionnaires were created in Google Forms and the links were provided for students to choose either the Malay or Chinese version. The questionnaires, with the same components as the paper-and-pencil questionnaire, were created on Google Forms. The first page of the questionnaire was the information sheet, and the students would click on the icon to move to the next page after reading and understanding all the information. Parents could read the information sheet, and if they understood and agreed with having their children participate in the survey, parents would pass the gadget to their children to answer the survey after clicking on the icon to proceed to the next page. Otherwise, parents could close the survey link if they declined to allow the students to participate in the survey. The third page was the informed consent form, and students who agreed to participate would click on the icon to proceed with answering the survey. The following pages contained questions on demographic information and scales used in this

study. Online surveys facilitated the completion of questionnaires as the students could answer regardless of location and time. Tokens of gratitude would be given to the participants after the completion of the questionnaires.

3.6 Data Analysis

Data analysis was conducted after finished collecting the data. The Statistical Package for Social Science (SPSS) statistical software 20th version (IBM Corporation, 2011) and SmartPLS 3.3.2 version (Ringle et al., 2015) were used for data analysis. SPSS (IBM Corporation, 2011) was used to record the raw data, and analysis would be done after data screening to obtain the findings for this study, including the descriptive statistics regarding the demographic information. Besides, multiple regression analysis was conducted to determine the control variables of this study.

On the other hand, SmartPLS (Ringle et al., 2015) was used to examine the measurement and structural models. SmartPLS was chosen as its objective was prediction and theory development (Dash & Paul, 2021), which was in line with this study's aim to extend the Salutogenic Model of Health with cybervictimization as the stressor, and to provide more information to fill in the literature gap on how these three variables were related. Based on the literature review, so far there was no study examining cybervictimization and its association with depression, with sense of coherence as the moderator among adolescents in Malaysia. The statistical model for moderation (Memon et al., 2019) were shown in Figure 7.

Figure 7

Statistical Model

```
┌─────────────────────────┐
│    Cybervictimization    │────────────────┐
└─────────────────────────┘                 │
                                             ▼
┌─────────────────────────┐         ┌──────────────────────────┐
│    Sense of coherence    │───────▶│        Depression         │
└─────────────────────────┘         └──────────────────────────┘
                                             ▲
┌─────────────────────────┐                 │
│ Cybervictimization*Sense of │─────────────┘
│        coherence         │
└─────────────────────────┘
```
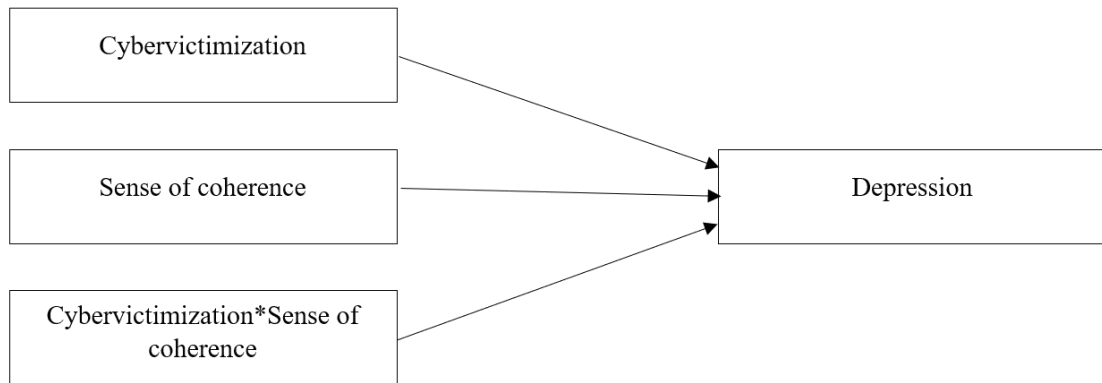
Chapter IV

Results

4.1 Normality of data

For a sample size of more than 300, the absolute value of skewness larger than 2 or the absolute value of kurtosis larger than 7 would indicate non-normal distribution (Kim, 2013). From Table 9, all absolute values of skewness and kurtosis were below the range, therefore indicating a normal distribution of the sample.

Mean replacement was used to handle missing data. It replaced the missing data with the mean of available data of the variable (Lodder, 2014), assuming that the data was from a normal distribution (Ng & Yusoff, 2011). This was because the mean was sensitive to extreme values if the data were skewed and not normally distributed (Manikandan, 2011). As the normality of data was being supported in this study, mean replacement could be used. Besides, mean replacement was suitable when there was low missing data (Parent, 2013), which was below 5% for each item in this study.

Table 9

Skewness and Kurtosis

	Skewness	Kurtosis
Cybervictimization	1.45	1.27
Sense of coherence	.57	.58
Depression	.61	-.33

4.2 Common method variance

The data in this study was collected from a single source using self-report surveys (cross-sectional method), and common method variance might arise (Tehseen et al., 2017). Common method variance is referred to as the systematic error variance due to the

measurement method instead of the constructs of the measurement (Podsakoff et al., 2003). Based on the recommendation by Bagozzi et al. (1991), the correlation matrix procedure was used to assess the common method variance issues. If there was large correlation among constructs, this might indicate the occurrence of common method bias. From Table 10, it was found that the correlation among all the constructs was less than .90, thus common method variance was not an issue in this study (Tehseen et al., 2017).

Table 10

Correlations among Latent Variables

	Cybervictimization	Sense of coherence	Depression
Cybervictimization	1.00		
Sense of coherence	-.27	1.00	
Depression	.39	-.48	1.00

4.3 Control variables

A multiple linear regression was conducted to examine whether the type of questionnaires answered and demographic information (state, age, gender, and ethnicity) would predict depression. The assumptions were as below:

1. Linearity

Scatterplots were created by inserting cybervictimization and sense of coherence on the X-axes, while depression was on the Y-axis. The fit line at total was added in the scatterplots (refer to Appendix U), showing linear relationships.

2. Independence of residuals

The value of the Durbin-Watson test of this study was 1.5, which is within the acceptable range between 1.5 and 2.5 (Azami et al., 2020), suggesting that the residuals were not correlated and the assumption was met.

3. No multicollinearity among independent variables

Collinearity analysis showed that all variance inflation factors (VIF) were 1.078 (less than 2), while all tolerance statistics were .928 (greater than .50), indicating that there was a lack of collinearity between independent variables (Azami et al., 2020), thus assumption was met.

4. Homoscedasticity

By looking at the scatterplot of standardized residuals against standardized predicted values (refer to Appendix U), there was a v-shaped pattern that suggested a violation of this assumption (Hickey et al., 2019). Although violation of homoscedasticity might reduce the accuracy of analysis, its effect on ungrouped data was not very detrimental as there was still validation of analysis (Tabachnick & Fidell, 2019). In this study, there was no categorization of variables, and thus the analysis might still be valid.

As the assumptions above were overall met, multiple linear regression was performed. From Table 11, the model was statistically significant, $F(6, 347) = 4.31$, $p < .001$, $R^2 = .07$. The format of distribution (online or paper-and-pencil survey) and language (Malay or Chinese language) of questionnaires answered, state, age, gender and ethnicity explained 7% of the variability of depression. It was also found that gender ($ß = .11$, $t = 2.08$, $p = .038$), and ethnicity ($ß = .23$, $t = 3.68$, $p < .001$), but not the questionnaire distribution format ($ß = .06$, $t = 0.52$, $p = .605$), language used ($ß = -.01$, $t = -0.11$, $p = .916$), state ($ß = -.15$, $t = -1.40$, $p = .161$), and age ($ß = .07$, $t = 1.24$, $p = .215$) significantly predicted depression, $p < .05$. Thus, gender and ethnicity were further included in the moderation model as control variables to

examine whether there were any other relationship present besides the interaction effect of sense of coherence in between cybervictimization and depression.

Table 11

Multiple Regression Analysis of Type of Questionnaires and Demographic Information as Predictors for Depression

Outcome variable	Predictor variable	F	R^2	df	β	t-value	p
Model		4.31	.07	(6, 347)			$< .001$
Depression	Format				.06	.52	.605
	Language				-.01	-.11	.916
	State				-.15	-1.40	.161
	Age				.07	1.24	.215
	Gender				.11	2.08	.038
	Ethnicity				.23	3.68	$< .001$

4.4 Measurement model

The measurement model assessed the latent variables or composite variables (Bollen & Noble, 2011). The model involved cybervictimization as the predictor variable, sense of coherence as the moderator variable, and depression as the outcome variable. Furthermore, control variables, namely gender and ethnicity were included in this model.

4.4.1 Reliability

Composite reliability is preferred to examine the measurement model's internal consistency reliability as Cronbach's alpha is sensitive to the number of items (Wong, 2016) and may generally underestimate true reliability in Partial Least Squares (PLS) path models

(Garson, 2016). As shown in Table 12, all composite reliabilities were above .60 and considered acceptable based on the suggested threshold by Srinivasan et al. (2002).

4.4.2 Validity

From Table 12, all HTMT values were less than .85, which was within the suggested threshold by Manfrin et al. (2019), therefore confirming the discriminant validity of measurement.

Table 12

Composite Reliability and Discriminant Validity

	Total items	*M*	*SD*	Composite Reliability	HTMT	
					1	2
1. Cybervictimization	11	0.6	0.7	.92		
2. Depression	13	0.6	0.5	.92	.41	
3. Sense of coherence	13	4.2	0.9	.80	.32	.58

The effect size f^2 indicates the strength of the predictor in explaining the outcome variable (Manfrin et al., 2019). As shown in Table 13, the value of f^2 for the moderating effect-depression was .010. Besides, the value of f^2 for cybervictimization-depression was .065, whereas the value of f^2 for sense of coherence-depression was .252. Among these predictive relationships, sense of coherence had the highest predictive power toward depression when compared with the moderating effect and cybervictimization toward depression. In particular, sense of coherence had a moderate effect size on depression, which was within the range of moderate effect size, $.15 \leq f^2 < .35$ based on the suggestion by Manfrin et al. (2019).

According to Hair et al. (2021), the moderation might have a small but meaningful effect size which was difficult to identify as significant. This was probably because the path model in SmartPLS included the moderator twice, namely the moderator (sense of coherence) itself and the interaction term (moderating effect of cybervictimization*sense of coherence) (see Figure 7 and Figure 8). The direct path from sense of coherence to depression should not be omitted as this might exaggerate the moderating effect of sense of coherence on the relationship between cybervictimization and depression. Therefore, the effect size should also consider the structural model analysis (Table 14) for the overall interpretation of significance results.

In addition, from Table 13, all inner VIF values were below 3, which was within the acceptable range as suggested by Manfrin et al. (2019), indicating that there was no collinearity problem in the measurement.

Table 13

Effect size (f^2) and collinearity statistics (VIF)

	f^2	VIF
Cybervictimization $\rightarrow$ depression	.065	1.27
Sense of coherence $\rightarrow$ depression	.252	1.44
Moderating effect $\rightarrow$ depression	.010	1.28
Control variables		
Gender $\rightarrow$ depression	.003	1.01
Ethnicity $\rightarrow$ depression	.004	1.09

4.5 Structural model

The structural model reflected the hypotheses based on the path analysis (Bollen & Noble, 2011). Figure 8 showed the structural model in SmartPLS. According to Hair et al.

(2021), the path model in SmartPLS included the moderator twice, namely the moderator (sense of coherence) itself and the interaction term (moderating effect of cybervictimization*sense of coherence) (as shown in Figure 8). In the initial step of data analysis procedure, cybervictimization as the predictor with an arrow pointing towards depression as the outcome variable were created in the SmartPLS path model. Next, the sense of coherence was added in the SmartPLS path model and represented by an arrow pointing towards depression. Both control variables (gender and ehtnicity) were also added as the predictors. After right clicking on the outcome variable (depression), "add moderating effect" was chosen to create the interaction term between cybervictimization and sense of coherence. In the "add moderating effect" setting, sense of coherence was clicked to indicate it as "moderator variable" while cybervictimization was inserted as the "independent variable" in the SmartPLS. SmartPLS would run the analysis with sense of coherence as the moderator, following the setting. Lastly, after clicking "OK", the new construct shown as "Moderating Effect 1" was created (Ramayah et al., 2018), as shown by the green circle in Figure 8 below. Based on this, moderation data analysis was conducted.

Figure 8

Structural Model
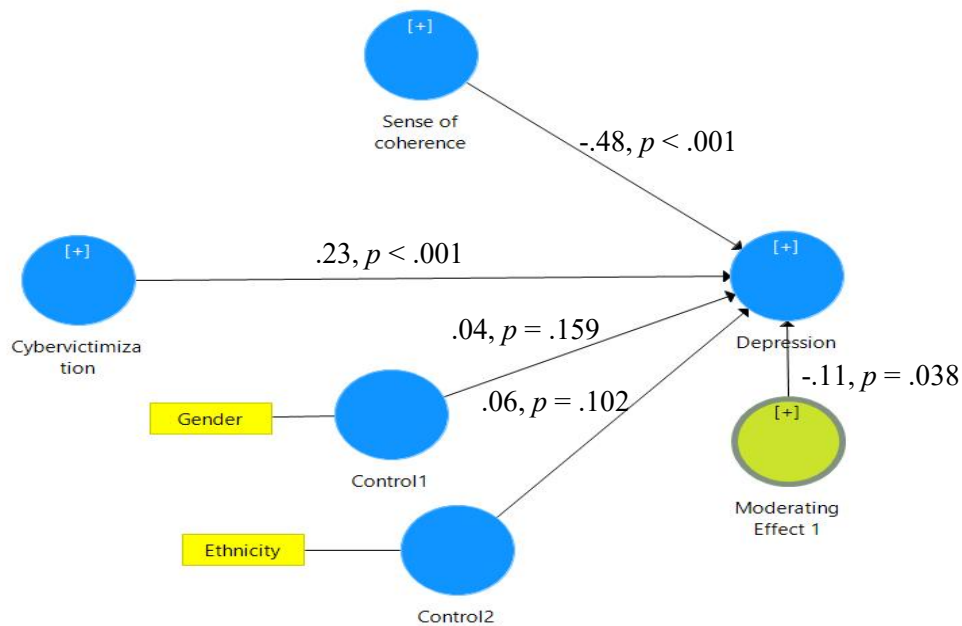
As shown in Table 14, after controlling gender and ethnicity, sense of coherence was negatively associated with depression, but cybervictimization was positively associated with depression, $p < .001$. Besides, sense of coherence was a significant moderator for the effects of sense of coherence on depression, $p = .038$. The moderating effect was negative and significant.

In addition, from Table 14, the R^2 for depression was .37, indicating a large predictive power as suggested by Cohen (1988). In other words, all the predictors (cybervictimization, and the interaction between cybervictimization and sense of coherence) explained 37% of the variance in depression.

Table 14

Structural Model

	ß	SE	*t*-value	*p*	95% CI
Cybervictimization → depression	.23	.05	4.81	< .001	[.15, .31]
Sense of coherence → depression	-.48	.05	10.09	< .001	[-.57, -.41]
Moderating effect → depression	-.11	.06	1.78	.038	[-.22, -.01]
Control variables					
Gender → depression	.04	.04	1.00	.159	[-.03, .11]
Ethnicity → depression	.06	.04	1.27	.102	[-.02, .12]
R^2 = .37			9.13	< .001	[.33, .46]

Note. CI, confidence interval.

According to the simple slope plot (Hair et al., 2017) as shown in Figure 9, there were three lines that represented the relationship between cybervictimization (x-axis) and depression (y-axis). The middle line referred to the relationship for an average level of sense of coherence. The other two lines showed the relationship between cybervictimization and depression for higher (mean value of sense of coherence plus one standard deviation unit) and lower (mean value of sense of coherence minus one standard deviation unit) levels of sense of coherence.

By looking at the gradient of slopes, the upper line (low sense of coherence) showed a steeper slope whereas the lower line (high sense of coherence) had a flatter slope. When sense of coherence level was high, the relationship between cybervictimization and depression was weaker. In contrast, when sense of coherence level was low, there might be a stronger relationship between cybervictimization and depression.

Figure 9

Simple Slope Analysis
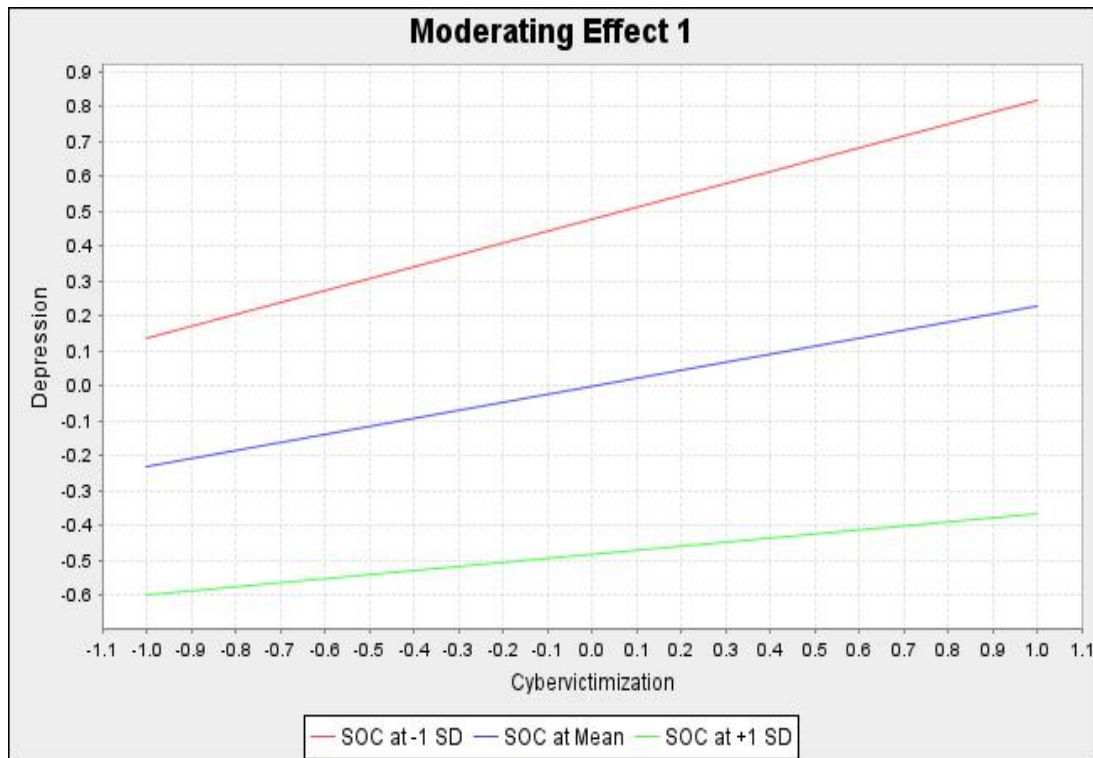
Chapter V

Discussion & Conclusion

5.1 Overview of Discussion

Past studies have found the association between cybervictimization and depression (Chu et al., 2018; Faura-Garcia et al., 2021; Iranzo et al., 2019), as well as the association between sense of coherence and depression (Jankowicz et al., 2021; Moksnes & Espnes, 2020). As such, it was assumed that there might be a link among these three variables. However, to the current knowledge, there were limited studies that examined cybervictimization as the stressor and its association with depression, with sense of coherence as the moderator in Malaysia. Based on the Salutogenic Model of Health, it was expected that sense of coherence could be a moderator in the association between cybervictimization and depression.

5.2 Summary of Results

5.2.1 RQ1: Is cybervictimization positively associated with depression?

The result supported the first hypothesis that cybervictimization was positively associated with depression. This was consistent with past studies (Chu et al., 2018; Faura-Garcia et al., 2021; Iranzo et al., 2019; Santos et al., 2021; Wang et al., 2020) as more severe or frequent cybervictimization was associated with the increased level of depression among adolescents. The severity of cybervictimization might influence the perception of being harmed among cybervictims (Langos, 2015). This was shown in the study by Wright et al. (2017) who stated that the severity of cybervictimization might increase the intensity of emotional responses, namely anger, sadness, and embarrassment especially when experiencing a public form of cybervictimization with a large audience witnessing the incidents. It was similar to study by Chamizo-Nieto and Rey (2021) who found that

adolescents were inclined to utilize less adaptive strategies (for instance focusing on negative emotions) in dealing with cybervictimization and it was associated with higher level of depression.

Cybervictimization often includes verbal insults or attacks on personal values (Wang et al., 2020) and the main damage is on harming reputation (Wright, 2016). The continuous insults or attacks might influence cybervictims' schemas of themselves and their interpersonal relationships, especially developing negative views of themselves or having thoughts that others purposefully harm them and mistrust others (Calvete et al., 2016). Those with negative self-beliefs were more vulnerable to experiencing depression (Gittins & Hunt, 2020), probably because this was linked to a circle of negative thinking, emotions, and maladaptive behaviors whereby these interactions could influence or maintain depression symptoms (Rnic et al., 2016). Besides, cybervictims might not identify the cyberbullies if they took advantage of being anonymous (Barlett, 2017), which probably heightened fear and insecure feelings, increasing the risk to develop depression (Bottino et al., 2015). It was possible that the increasing demands to be socially accepted and supported by peers (Kiuru et al., 2020) might substantially impact adolescents' health outcomes in term of depression, as they experienced negative social relationship and damage of reputation in the social circle in the form of cybervictimization (Bottino et al., 2015).

5.2.2 RQ2: Does sense of coherence moderate the association between cybervictimization and depression?

The result supported the second hypothesis that sense of coherence was a significant moderator in the relationship between cybervictimization and depression. In other words, there were direct and moderating effect of sense of coherence on depression in the context of cybervictimization. This was in line with the Salutogenic Model of Health used in previous

studies which found that sense of coherence was a stress moderator (Leda & Grazziano, 2018; Richardson & Ratner, 2005). Sense of coherence is the central concept of the Salutogenic Model of Health related to well-being and psychological adjustment, for instance depression (Lajunen, 2019), which was assumed to be a relevant theory for this study.

Direct effect of sense of coherence on depression

There are two ways to explain the buffering effects of sense of coherence on health outcomes: i. less likely to perceive events as threatening and ii. promote the ability to choose appropriate coping strategies and utilize available resources (García-Moya, Suominen, et al., 2014). Those with a strong sense of coherence are likely to be less worried about life events, expect a more positive future, and be able to identify and utilize resources to deal with stressful events (Chiesi et al., 2018). Sense of coherence was negatively associated with depression (Länsimies et al., 2017; Moksnes et al., 2012). This supported the finding of this study, whereby sense of coherence had a negative impact on depression. During the adolescence developmental stage, abstract thinking, cognitive processing, and moral reasoning and judgement would develop, for instance adolescents could think about future consequences of their behaviors, as well as able to control or regulate their emotions. These abilities might shape the development of sense of coherence during adolescence, moving from using any specific coping resource to identifying and getting more familiar with different personal and social coping resources (Braun-Lewensohn et al., 2022).

According to the Salutogenic Model of Health, sense of coherence is a general coping resource that can reduce stress outcomes by influencing the cognitive and emotion appraisals of the stimuli faced, for instance developing perception to make sense and feel in control of the situation (Naudé & Rothmann, 2006). Appraisals regarding the certain situation will affect health outcomes, for instance maladaptive appraisals including a lack of confidence to

adapt resources and feeling a lack of control of the situation might be associated with negative health outcomes (Keller et al., 2012; Sawyer et al., 2019). Those with a high sense of coherence may perceive the situation as being less stressful and less disruptive, therefore less likely to experience depression (Li et al., 2021). It was also found that sense of coherence could predict a reduced level of depression after six weeks (Noyman-Veksler et al., 2015). A review of interventions based on the Salutogenic Model of Health also showed improvements in reducing depression over time (Álvarez et al., 2021).

Moderating effect of sense of coherence

Sense of coherence was a significant moderator in the relationship between cybervictimization and depression in this study. Similar result was found in previous studies which examined the moderating role of sense of coherence in the relationship between various stressors and mental health outcomes (Barni et al., 2020; Moksnes et al., 2014). Stressors are events that can be objectively viewed as having the possibility to change or disrupt psychological functioning (Crosswell & Lockwood, 2020). Cybervictimization is a form of stressor characterized by repetition, chronic and uncontrollable events (Quintana-Orts et al., 2020). When experiencing a similar level of cybervictimization, some adolescents might report better health outcomes than those who were in a more maladaptive state, as such Antonovsky viewed sense of coherence as having a buffering effect against stressors (Holmefur et al., 2015).

This study also found that cybervictimization was positively associated with depression when the participants reported a low sense of coherence. In contrast, a high sense of coherence level led to a weaker positive relationship between cybervictimization and depression. This might support the stress-moderating effect of sense of coherence as suggested by the Salutogenic Model of Health. Sense of coherence was negatively linked

with health outcomes for instance depression among adolescents (Länsimies et al., 2017; Moksnes et al., 2012). However, the moderating effects of sense of coherence against negative health outcomes of stressful events probably depended on the types and severity of stressors (Barni et al., 2020; Moksnes & Haugan, 2015). The types and severity of stressors might interact differently with sense of coherence against the health outcomes. Sense of coherence might influence the appraisals towards the situation, and especially those with a low sense of coherence would perceive the stressor as being more threatening than it actually was (García-Moya, Suominen, et al., 2014). Similarly, appraisals such as a lack of confidence to utilize resources and lack of control could be associated with negative health outcomes (Keller et al., 2012; Sawyer et al., 2019).

Furthermore, there was a weaker positive association between cybervictimization and depression when sense of coherence was high. When countering similar levels of cybervictimization, those with a high sense of coherence would report lower depression levels in comparison with those having a low sense of coherence. This weaker strength of association between stressor and health outcomes, as well as the moderating effect might be in line with a ten-year longitudinal study with 429 adolescents aged between 11 and 15 years old reassessed during follow-up in Brazil. It was found that moderate and high levels of sense of coherence showed a moderating effect between social capital (less social networks and less trust towards peers) and oral health outcomes. Even though the participants had low social capital, those with moderate and high levels of sense of coherence had a lower risk of reporting oral health outcomes when compared with those having low level of sense of coherence (Knorst et al., 2022). This might suggest the protective role of sense of coherence against negative health outcomes among adolescents.

Regarding the strength of associations between variables in this study, the direct effect of sense of coherence on depression was stronger than the interaction effect of

cybervictimization and sense of coherence on depression. Previous studies have shown a negative association between sense of coherence and depression, for instance a review study supported the result that sense of coherence was associated with reduced depression (Del-Pino-Casado et al., 2019). Although the moderating effect of sense of coherence was also found in this study, the strength of association was weaker than the direct effect of sense of coherence on depression. According to the Salutogenic Model of Health, it was explained that sense of coherence was undergoing continuing development from childhood to late adolescence stage (Richardson & Ratner, 2005). Due to the continuing development over time, exposure to various stressors could provide the opportunity to develop structured and meaning by making sense of the stressful situations and to search for resources available in the future to deal with stressors (Super et al., 2016). From this view, it was possible that the development of sense of coherence was still ongoing and unstable (Grevenstein & Bluemke, 2015) among the participants in this study who were in their early adolescence stage, which might explain the weaker moderating effect when compared with the direct effect of sense of coherence on depression.

5.3 Implications

In terms of theoretical implications, this study might extend the application of the Salutogenic Model of Health with cybervictimization as a stressor among the adolescent sample group, since the Salutogenic Model of Health were usually conducted in the context such as peer pressure (Moksnes et al., 2014), work stressors (Albertsen et al., 2001; Bezuidenhout & Cilliers, 2010; Kinman, 2008), and workplace bullying (Nielsen et al., 2008). Stressors are events that can be objectively viewed as having the possibility to change or disrupt psychological functioning (Crosswell & Lockwood, 2020). Cybervictimization is a form of stressor characterized by repetition, chronic and uncontrollable events (Quintana-Orts

et al., 2020). Concerning this, the Salutogenic Model of Health highlighted the central role of sense of coherence, which was linked with the ability to utilize cognitive, emotion and behavioral strategies as sense of coherence could assist one to identify and employ various resources by reappraising the stimuli in a more positive view (Mittelmark & Bauer, 2022). This in turn helped to improve one's ability to overcome stressors (Leventhal et al., 2016), namely cybervictimization in this study. As sense of coherence could protect against the impact of stressor (Richardson & Ratner, 2005), and literature found that sense of coherence was a moderator between various stressors and health outcomes (eg. Barni et al., 2020, Moksnes et al., 2014), it was assumed that sense of coherence could moderate the impact of cybervictimization (a type of stressor) on depression among adolescents. This will provide information on the moderating effect of sense of coherence, which acts as the protective factor. Among those with high sense of coherence, even if they experienced cybervictimization, they would report a lower level of depression. In contrast, when participants reported a low sense of coherence, they were more likely to report a higher level of depression after experiencing cybervictimization. Furthermore, it was hoped to extend the utilization of the Salutogenic Model of Health if the findings are replicated and further examined in a different context of stressors.

In terms of practical implications, the results could contribute to raising awareness among school authorities and parents to promote sense of coherence among adolescents by basing on statistical evidence. The results found that sense of coherence was negatively associated with depression among adolescent cybervictims, which has also been reported in previous studies that those with a strong sense of coherence might have a lower tendency to report depression (Länsimies et al., 2017; Moksnes et al., 2012). Similarly, a study of 197 students between 12 and 16 years old in Malaysia found that the moderation effect was more stronger among those with more resources (Noor & Alwi, 2013). It is therefore suggested that

school authorities and parents could guide adolescents to deal with cybervictimization by strengthening sense of coherence through identifying and implementing generalized resistance resources, for instance providing social support by showing openness to listen, caring, and a positive tone of interactions. The encouragement from adults was crucial in the intervention of strengthening sense of coherence (Reinodt et al., 2022). Besides, it was suggested that adolescents in Malaysia strongly valued the relationship among family members, and would also turned to teachers or peers for social support (Noor & Alwi, 2013). This might indicate the crucial role of promoting social support as the generalized resistance resource to strengthen sense of coherence in intervention programs, and easier to tackle on such available resources in which adolescents are having strong ties with parents, peers or even teachers.

In addition, a fourteen weeks group-based exercise intervention study involving fourteen adolescents with persistent depression suggested that the knowledge about the health benefits could promote sense of coherence (Reinodt et al., 2022). In the present study, when the level of sense of coherence was higher, the level of depression was lower, suggesting that sense of coherence had a protective role against depression. Such health benefit could be shared to adolescents so that they understood and more willing to implement the knowledge and activities learned from the intervention programs.

5.4 Limitations of Study

There are a few limitations of study which should be addressed for improvements. The first limitation was overlooking the chances that the participants were cybervictims and at the same time traditional victims. This study showed that around 5.9% (21 participants) reported being victims in both traditional and online contexts. A review among children and adolescents in Australia supported this result, as cybervictimization was found to be

overlapped with traditional victimization (Jadambaa et al., 2019). Adolescents who were cybervictims and also traditional victims were more likely to report more severe impacts including greater reluctance to go to schools than those who were only traditional victims (Cross et al., 2015). Similarly, those who experienced both types of victimization faced the greatest risk of negative outcomes such as suicidal risk (Peng et al., 2019) and psychosomatic symptoms (Li et al., 2019). The reasons might be due to feeling that there was no safe place to escape from such issues (Peng et al., 2019), for instance the victimization might become more intense as they were targeted in schools and also received hurtful messages when using smartphones in their homes. Besides, based on the Salutogenic Model of Health, appraisals regarding the severity of experiencing only cybervictimization or both types of victimization would differently influence the health outcomes (Keller et al., 2012; Sawyer et al., 2019). It was assumed that victims of both traditional victimization and cybervictimization might experience greater negative outcomes including depression and the moderating effect of sense of coherence might also change depending on the severity of stressors.

The second limitation was the samples in this study were from a few towns or cities in Malaysia, it was likely that those from rural areas could have different levels of Internet usage and availability, and the chances of experiencing cybervictimization and its impact on depression could be different. According to the Internet Users Survey in 2020 in Malaysia, 75.6% of Internet users were from urban areas whereas only 24.4% of Internet users were from rural areas (Malaysian Communications and Multimedia Commission, 2020). It was possible that adolescents who were more frequently engaged in online communication and social networking would have more risk of experiencing cybervictimization, which was associated with various negative impacts (Cebollero-Salinas et al., 2022). Furthermore, as not everyone has good Internet access, especially in rural areas, there might be bias in sample (Andrade, 2020) as the responses collected were limited to those with Internet access.

Lastly, this study was using a cross-sectional design. According to Wang and Cheng (2020), the data from the cross-sectional study were collected from a certain population at only one specific time point. The experiences of cybervictimization as the predictor variable, sense of coherence as the moderator variable, with depression as the outcome variable were measured at the same time to understand their associations without further follow-up study. Therefore, it was difficult to suggest causal relationships in this study. Although a one-tailed test was performed in moderation analysis and found that cybervictimization influences depression depending on the level of sense of coherence, causal relationships could not be indicated in a cross-sectional study.

5.5 Recommendations of Study

A few recommendations are suggested to improve the limitations for future studies. The first recommendation was to consider traditional victimization and cybervictimization simultaneously. From previous studies (such as Li et al., 2019; Peng et al., 2019), it seemed that traditional victimization and cybervictimization were likely to co-occur and could predict similar outcomes such as poorer mental health (Thomas et al., 2015). By including the possibility of experiencing both types of victimization at the same time or only one type of victimization, there could be varying strengths of associations that could provide a broader view regarding victimization, its outcome, and the buffering effect of sense of coherence.

The second recommendation was to replicate the current study on Internet users from different urban and rural areas to further understand how sense of coherence would act on the association between cybervictimization and depression. Previous studies such as Thai et al. (2022) have suggested that urban and rural areas might have different levels of Internet usage, and different risks of developing depression, thus the association between cybervictimization and depression as well as the moderating effect in this association could be different.

The last recommendation was to measure the independent and dependent variables in a long-term run, for instance longitudinal study design. By following up with the change over a certain period within the population, the sequence of events might be established (Caruana et al., 2015). The changes in behaviors such as cybervictimization acts and health outcomes of certain population samples in the long-term run might represent the trends better than cross-sectional study, and might also gain more understanding in explaining the underlying mechanisms. There might be higher accuracy to represent the trends and explain the indirect mechanisms of the relationship due to repeated collection of data, and thus could claim a causal relationship in a longitudinal study.

5.6 Conclusion

In overall, this study broadened the understanding of the relationships among cybervictimization, sense of coherence, and depression in an adolescent sample in Malaysia. Cybervictimization was positively associated with depression, whereas sense of coherence was a significant moderator in the relationship between cybervictimization and depression. When sense of coherence was low, cybervictimization was more positively associated with depression in comparison with when sense of coherence was high. This might probably be due to the ongoing and still unstable development of sense of coherence during adolescence stage, whereby they might display less mature cognitive processing (for example having a more negative appraisal of cybervictimization), as such having less confidence to cope with cybervictimization. Through continuous learning and getting familiar with the availability of various resources when dealing with developmental challenges when striving for independence, adolescents might strengthen sense of coherence, which was related to a more positive health outcomes even if they experienced stressors in daily life.

Cybervictimization could be further researched by considering the overlapping of traditional victimization, the inclusion of other demographic information such as living areas, as well as the longitudinal study design to provide a more comprehensive understanding. The theoretical and practical implications might suggest future researchers, policy makers, school authorities, parents, and even adolescents themselves to promote sense of coherence and prevent or reduce cybervictimization which could result in more positive health outcomes.

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Appendix A

Screenshot of Search Result on Cybervictimization Definition in Scopus Database

Appendix B

Screenshot of Search Result on Prevalence of Cybervictimization in Scopus Database

Appendix C

Screenshot of Search Result on Outcomes of Cybervictimization in Scopus Database

Appendix D

Screenshot of Search Result on Cybervictimization and Depression in Scopus Database

Appendix E

Screenshot of Search Result on the Relationship among Cybervictimization, Sense of

Coherence and Depression in Scopus Database

Appendix F

Screenshot of Search Result on Sense of Coherence as Moderator (2017-2021) in Scopus

Database

Appendix G

Screenshot of Search Result on Sense of Coherence as Moderator (2012-2021) in Scopus

Database

Appendix H

Sample Size Calculation Using G*Power

Appendix I

Questionnaire Information Sheet (Malay Version)

Universiti Tunku Abdul Rahman
Borang Makluman

Tajuk: Dibuli Siber dan Kemurungan dalam Kalangan Remaja di Malaysia: Koheren sebagai Penyederhana

Anda dijemput untuk menyertai kajian ini. Sila luangkan sedikit masa untuk membaca maklumat mengenai kajian ini.

Tujuan kajian: Kajian ini dijalankan untuk meneroka bagaimana dibuli siber dan koheren mempengaruhi tahap kemurungan.

Prosedur: Anda akan diminta untuk melengkapkan soal selidik yang mengandungi soalan-soalan mengenai latar belakang, soalan daripada *European Cyberbullying Intervention Project Questionnaire (ECIPQ)*, *Sense of Coherence scale (SOC-13)*, dan *Short Mood and Feelings Questionnaire (SMFQ)*. Soal selidik ini mempunyai 42 soalan. Anda akan mengambil masa lebih kurang 20-30 minit untuk melengkapkan soal selidik ini.

Penyertaan sukarela: Anda difahamkan bahawa penyertaan dalam kajian ini adalah secara sukarela dan anda boleh membuat keputusan untuk tidak menyertai kajian, atau menarik diri daripada kajian ini pada bila-bila masa tanpa sebarang penalti atau kehilangan sebarang manfaat.

Kerahsiaan dan keselamatan data: Segala maklumat yang diberi akan dirahsiakan dan disulitkan. Tiada sebarang maklumat berkaitan identiti akan didedahkan kepada pihak ketiga, kecuali sekiranya dikehendaki oleh undang-undang.

Kemungkinan risiko dan manfaat: Anda mungkin akan berasa tidak selesa semasa menjawab sesetengah soalan. Sila maklumkan kepada guru, kaunselor atau pengkaji sekiranya situasi ini berlaku.

Anda boleh memberitahu dan berkongsi perkara dengan orang yang dipercayai, seperti ahli keluarga, kawan, guru atau kaunselor. Anda juga boleh menghubungi:

Befrienders KL
Telefon: 03-76272929 (24 jam)
E-mel: sam@befrienders.org.my
Maklumat lanjut boleh didapati di laman web https://www.befrienders.org.my/

Anda juga boleh melaporkan insiden keselamatan siber melalui **Pusat Bantuan Cyber999**:
Hotline: 1-300-88-2999
Telefon: 019-2665850
E-mel: cyber999@cybersecurity.my
SMS: CYBER999 REPORT (e-mel)(complain) ke 15888
Cyber999 *app*: Muat turun di App Store atau Google Play
Borang atas talian: https://www.mycert.org.my/

Maklumat perhubungan: Sekiranya anda mempunyai sebarang pertanyaan mengenai kajian ini, anda boleh menghubungi Dr Siah Poh Chua (siahpc@utar.edu.my), Ms Komathi a/p Lokithasan (komathil@utar.edu.my), atau Tee Xiang Yi (yutee2109@1utar.my).

Appendix J

Informed Consent Form for Parents/Guardians (Malay Version)

Universiti Tunku Abdul Rahman
Borang Keizinan Ibubapa/Penjaga

Tajuk: Dibuli Siber dan Kemurungan dalam Kalangan Remaja di Malaysia: Koheren sebagai Penyederhana

Terima kasih kerana sudi membaca borang makluman ini. Jika anda membenarkan anak anda menyertai kajian ini, sila isi dan tandatangan borang ini. Sila tandakan (√) di kotak-kotak berkenaan untuk mengesahkan bahawa anda bersetuju dengan setiap kenyataan berikut:

	Sila (√)
Kami telah **membaca dan memahami** maklumat yang diberi, termasuk maklumat mengenai tujuan kajian, risiko dan manfaat penyertaan, dan telah menanyakan soalan yang kami ingin mengetahui tentang kajian ini.	
Kami memahami bahawa penyertaan anak kami adalah **secara sukarela** dan kami boleh menamatkan penyertaan pada bila-bila masa tanpa memberi sebarang sebab atau kehilangan sebarang manfaat. Selain itu, sekiranya anak kami enggan menjawab soalan-soalan tertentu, kami boleh menolak untuk menjawab.	
Kami memahami bahawa maklumat yang diberi oleh anak kami akan **dipastikan sulit** dan nama anak kami tidak akan dicatatkan dalam bahan kajian serta tidak akan didedahkan dalam sebarang laporan hasil dapatan kajian ini.	
Kami **bersetuju** untuk membenarkan anak kami menyertai kajian ini.	

_____ Tandatangan ibubapa/penjaga	_____ Tarikh
_____ Tandatangan pengkaji	_____ Tarikh

Appendix K

Informed Consent Form for Participants (Malay Version)

Borang Keizinan Peserta Kajian

Saya telah membaca dan memahami maklumat yang diberi, termasuk maklumat mengenai tujuan kajian, risiko dan manfaat penyertaan. Saya telah menanyakan soalan yang saya ingin mengetahui tentang kajian ini dan soalan saya telah dijawab. Dengan menandatangani borang keizinan ini, saya secara sukarela menyertai kajian ini.

_____

Tandatangan peserta

Tarikh:

Appendix L

Questionnaire (Malay Version)

Borang Soal Selidik

Terdapat empat bahagian dalam soal selidik ini, yang terdiri daripada soalan-soalan mengenai demografi, pengalaman dibuli siber, koheren dan tahap kemurungan. Sila jawab semua soalan. Tidak ada jawapan betul atau salah.

Bahagian A: Demografi

Sila **BULATKAN** jawapan yang menggambarkan keadaan anda.

1. Umur: i. 13   ii. 14   iii. 15

2. Jantina: i. Lelaki   ii. Perempuan

3. Etnik: i. Melayu   ii. Cina

        iii. India   iv. Lain-lain. Sila nyatakan: _____

4. "Dalam tempoh 12 bulan yang lepas", pernahkah anda **DIBULI DI SEKOLAH**?

Tidak pernah	Jarang	Kadangkala	Kebanyakan masa	Sangat kerap

5. "Dalam tempoh 12 bulan yang lepas", pernahkah anda **DIBULI DI ALAM SIBER**?

Tidak pernah	Jarang	Kadangkala	Kebanyakan masa	Sangat kerap

Bahagian B: Berapa kerapnya anda mengalami situasi buli siber yang berikut?

Arahan: Sila baca pernyataan berikut dan **<u>BULATKAN</u>** jawapan yang menggambarkan keadaan anda. Bulatkan satu jawapan sahaja. Tidak ada jawapan betul atau salah.

		Tidak pernah	Sekali atau dua kali	Sekali atau dua kali dalam sebulan	Sekali dalam seminggu	Lebih daripada sekali dalam seminggu
1.	Seseorang mengatakan sesuatu yang tidak baik kepada saya atau memanggil saya nama menggunakan teks atau mesej dalam talian.	0	1	2	3	4
2.	Seseorang mengatakan sesuatu yang tidak baik tentang saya kepada orang lain sama ada dalam talian atau melalui mesej teks.	0	1	2	3	4
3.	Seseorang mengugut saya melalui mesej teks atau mesej atas talian.	0	1	2	3	4
4.	Seseorang menggodam akaun saya dan mencuri maklumat peribadi (e.g. melalui e-mel atau laman web sosial).	0	1	2	3	4
5.	Seseorang menggodam akaun saya dan berpura-pura sebagai saya (e.g. melalui aplikasi mesej segera atau laman web sosial).	0	1	2	3	4
6.	Seseorang membuka akaun palsu dan berpura-pura sebagai saya (e.g. di *Facebook* atau *MSN*).	0	1	2	3	4
7.	Seseorang menyiarkan maklumat peribadi saya atas talian.	0	1	2	3	4
8.	Seseorang memuat naik video-video atau gambar-gambar saya yang memalukan atas talian.	0	1	2	3	4
9.	Seseorang telah menukar gambar atau video saya yang telah saya letak dalam talian.	0	1	2	3	4
10.	Saya telah diketepikan atau diabaikan oleh orang lain di laman web sosial atau dalam kumpulan perbualan Internet.	0	1	2	3	4
11.	Seseorang menyebarkan khabar angin tentang saya melalui Internet.	0	1	2	3	4

Bahagian C: Adakah anda berasa bahawa fikiran anda tidak sama seperti yang berlaku dalam realiti?

Arahan: Sila baca pernyataan berikut dan **<u>BULATKAN</u>** jawapan yang menggambarkan keadaan anda. Bulatkan satu jawapan sahaja. Tidak ada jawapan betul atau salah.

1.	Sehingga kini hidup anda telah	Tidak sama sekali ada matlamat atau tujuan yang jelas	1	2	3	4	5	6	7	Ada matlamat atau tujuan yang sangat jelas
2.	Adakah anda mempunyai perasaan bahawa anda tidak begitu peduli terhadap apa yang berlaku di sekeliling anda?	Sangat jarang atau tidak pernah	1	2	3	4	5	6	7	Sangat kerap
3.	Adakah telah berlaku pada masa lalu bahawa anda terkejut dengan tingkah laku orang yang anda fikir anda kenal dengan baik?	Tidak pernah berlaku	1	2	3	4	5	6	7	Selalu berlaku
4.	Adakah telah berlaku bahawa orang yang anda percayai telah mengecewakan anda?	Tidak pernah berlaku	1	2	3	4	5	6	7	Selalu berlaku
5.	Adakah anda berperasaan bahawa anda dilayan secara tidak adil?	Sangat kerap	1	2	3	4	5	6	7	Sangat jarang atau tidak pernah
6.	Adakah anda mempunyai perasaan berada di dalam situasi yang anda tidak biasa dan tidak tahu apa yang harus dilakukan?	Sangat kerap	1	2	3	4	5	6	7	Sangat jarang atau tidak pernah
7.	Melakukan perkara-perkara yang anda lakukan setiap hari adalah	Sumber kesukaan dan kepuasan	1	2	3	4	5	6	7	Sumber sakit dan kebosanan
8.	Adakah anda mempunyai perasaan dan idea yang bercampur-baur?	Sangat kerap	1	2	3	4	5	6	7	Sangat jarang atau tidak pernah
9.	Adakah terdapat perasaan bahawa anda mempunyai perasaan di dalam diri tetapi anda tidak ingin merasa?	Sangat kerap	1	2	3	4	5	6	7	Sangat jarang atau tidak pernah
10.	Ramai orang - walaupun mereka yang mempunyai peribadi yang kuat - kadang-kadang berasa seperti seseorang yang kalah	Sangat jarang atau tidak pernah	1	2	3	4	5	6	7	Sangat kerap

	(kecundang) dalam situasi tertentu. Berapa kerapkah anda merasakan perkara seperti ini pada masa yang lalu?								
11.	Apabila sesuatu berlaku, adakah anda secara umumnya mendapati bahawa	Anda terlalu memandang berat atau memandang ringan kepentingannya	1	2	3	4	5	6	7	Anda melihat perkara dalam susunan yang betul
12.	Berapa kerapnya anda berperasaan bahawa perkara yang anda buat dalam kehidupan seharian kurang bermakna?	Sangat kerap	1	2	3	4	5	6	7	Sangat jarang atau tidak pernah
13.	Berapa kerapnya anda tidak pasti adakah perasaan anda berada di bawah kawalan?	Sangat kerap	1	2	3	4	5	6	7	Sangat jarang atau tidak pernah

Bahagian D: Apakah perasaan anda semasa mengalami masalah buli siber?

Arahan: Sila baca pernyataan berikut dan **<u>BULATKAN</u>** jawapan yang menggambarkan keadaan anda *dalam dua minggu yang lepas*. Bulatkan satu jawapan sahaja. Tidak ada jawapan betul atau salah.

		Tidak benar	Kadang kala	Benar
1.	Saya berasa sengsara atau tidak gembira.	0	1	2
2.	Saya langsung tidak dapat menikmati apa-apa perkara.	0	1	2
3.	Saya berasa sangat letih, saya hanya duduk dan tidak melakukan apa-apa.	0	1	2
4.	Saya sangat resah.	0	1	2
5.	Saya rasa saya tidak berguna lagi.	0	1	2
6.	Saya banyak menangis.	0	1	2
7.	Saya sukar untuk berfikir dengan teliti atau menumpukan perhatian.	0	1	2
8.	Saya membenci diri sendiri.	0	1	2
9.	Saya seorang yang jahat.	0	1	2
10.	Saya berasa kesunyian.	0	1	2
11.	Saya fikir bahawa tidak ada sesiapa yang benar-benar mencintai saya.	0	1	2
12.	Saya fikir bahawa diri sendiri tidak akan sebaik kanak-kanak lain.	0	1	2
13.	Saya berbuat salah dalam semua perkara.	0	1	2

~~~Terima kasih atas penyertaan anda~~~

Appendix M

Questionnaire Information Sheet (Chinese Version)

拉曼大学
参与者信息表

研究标题：马来西亚青少年中的网络霸凌与抑郁：心理一致感的调节作用

您被邀参与这项研究。请花一点时间认真阅读这项研究的信息。

研究的目的：这项研究的目的是为了探讨网络霸凌和心理一致感如何影响抑郁程度。
步骤：您将被要求填写调查问卷，题目包括个人基本信息、欧洲网络霸凌介入项目问卷调查、心理一致感问卷和简化情绪量表。这份调查问卷一共 42 道题，所花费时间大约 20 - 30 分钟。
自愿参与：参与这项研究全基于自愿的原则。您有权决定不参与或随时退出研究，这将不会影响到您或导致现在或未来的任何利益损失。
资料保密性和安全性：您提供的所有信息绝对保密。任何可识别身份的信息将不会提供给第三方，除非有紧急事件或法律要求。
可能带来的风险和益处：您可能在回答一些问题时会感到不适。若有此情况，请通知老师、辅导员或研究员。 您可以将事情告诉或分享给您信任的人，如家人、朋友、老师或辅导员。此外，您也可以联系： **吉隆坡心灵扶助协会** 电话：03-76272929（24 小时） 电子邮件：sam@befrienders.org.my 欲知更多详情，请浏览网站 https://www.befrienders.org.my/ **您也可以通过 Cyber999 求助中心投报网络安全事件：** 热线：1-300-88-2999 电话：019-2665850 电子邮件：cyber999@cybersecurity.my 手机简讯：CYBER999 REPORT (电子邮件)(投诉) 发送至 15888 Cyber999 手机应用程式：可通过 App Store 或 Google Play 下载 线上表格：https://www.mycert.org.my/
联络方式：如果您对这项研究有任何疑问，您可以联系谢保泉博士（siahpc@utar.edu.my），Ms Komathi a/p Lokithasan（komathil@utar.edu.my），或者郑湘怡（yutee2109@1utar.my）。

Appendix N

Informed Consent Form for Parents/Guardians (Chinese Version)

<div align="center">

拉曼大学
父母或监护人知情同意书

</div>

研究标题：马来西亚青少年中的网络霸凌与抑郁：心理一致感的调节作用

感谢您阅读参与者信息表。如果您同意您的孩子参与本研究，请完成下列部分和在表格签字。请在格子里打勾（√）以表示同意以下各项说明：

	请（√）
我确认我已**阅读和理解**参与者信息表所提供的资料，包括研究的目的、参与这项研究可能带来的风险和益处，并且有机会提出问题和获得答案。	
我理解我的孩子参与这项研究是**自愿的**，并且有权随时退出这项研究而无需提供任何理由以及不会导致任何利益损失。如果我的孩子不想回答任何一道或多道问题，我们有权拒绝回答。	
我明白我的孩子的回答将是**保密的**。我理解我的孩子姓名将不会和研究内容联系起来，也不会在任何研究结果报告中被识别个人信息。	
我**同意**我的孩子参与这项研究。	

_____ 父母或监护人签名	_____ 日期
_____ 研究员签名	_____ 日期

Appendix O

Informed Consent Form for Participants (Chinese Version)

参与者知情同意书

我已经阅读并且已经理解参与者信息表所提供的资料，包括研究的目的、参与这项研究可能带来的风险和益处。我有机会提出问题和已经获得答复。签署这份同意书，我声明我是自愿参与本研究。

_____
参与者签名

日期：

Appendix P

Questionnaire (Chinese Version)

调查问卷

这份调查问卷有四个部分，题目包括个人基本信息、遭受网络霸凌的经历、心理一致感和抑郁程度。请回答以下所有问题，答案没有对错之分。

第一部分：个人基本信息

请根据您的实际情况回答，在符合您情况的答案上<u>画圈</u>。

1. 年龄： i. 13　　ii. 14　　iii. 15

2. 性别： i. 男　　ii. 女

3. 种族：　　i. 巫裔　　ii. 华裔

　　　　iii. 印裔　　iv. 其他。请列出：＿＿＿＿＿＿＿

4. 在"过去 12 个月"您曾遭受<u>校园霸凌吗</u>？

从不	偶尔	有时	经常	总是

5. 在"过去 12 个月"您曾遭受<u>网络霸凌吗</u>？

从不	偶尔	有时	经常	总是

第二部分：您遇到以下网络霸凌的次数是多少？

请仔细阅读以下的句子，然后按照您的实际情况，在最符合您情况的答案上**画圈**。每题只能选一个答案，答案没有对错之分。

		从不	1 到 2 次	一个月 1 到 2 次	一个星期 1 次	一个星期 超过 1 次
1.	有人使用短信或网上讯息对我说些恶心的事，或给我起名字。	0	1	2	3	4
2.	有人使用短信或网上讯息对其他人说了关于我的坏话。	0	1	2	3	4
3.	有人使用短信或网上讯息威胁我。	0	1	2	3	4
4.	有人入侵我的帐户并偷走了我的个人资料（例如通过电子邮件或社交网络帐户）。	0	1	2	3	4
5.	有人入侵我的帐户并冒充我（例如通过电子邮件或社交网络帐户）。	0	1	2	3	4
6.	有人创建了一个虚假帐户并冒充我（例如在脸书或 MSN 上）。	0	1	2	3	4
7.	有人在网上发布了有关我的个人信息。	0	1	2	3	4
8.	有人在网上发布了和我有关的尴尬视频或照片。	0	1	2	3	4
9.	有人修改了我在网上发布关于我的照片或视频。	0	1	2	3	4
10.	在社交网站或互联网聊天室，我被其他人排斥或忽略。	0	1	2	3	4
11.	有人在互联网传播关于我的谣言。	0	1	2	3	4

第三部分：您认为自己的想法和现实有差距吗？

请仔细阅读以下的句子，然后按照您的实际情况，在最符合您情况的答案上**画圈**。每题只能选一个答案，答案没有对错之分。

1.	到目前为止，你的生活_____。	根本没有生活目标或没有明确的目的	1	2	3	4	5	6	7	生活目标和目的非常明确
2.	你是不是常常觉得自己对周围发生的事并不关心？	从来没有或较少	1	2	3	4	5	6	7	经常
3.	你本来以为很了解的人做出让你吃惊的行为，这种情况在过去是不是经常发生？	从来没有或较少	1	2	3	4	5	6	7	经常
4.	你指望的人却让你失望，这种情况_____。	从来没有或较少	1	2	3	4	5	6	7	经常

5.	你是不是经常感到自己受到不公正的对待？	经常	1	2	3	4	5	6	7	从来没有或较少
6.	你是不是经常感到自己处于陌生的、不知如何是好的环境中？	经常	1	2	3	4	5	6	7	几乎没有或从没有
7.	做那些你每天都做的事对于你来说_____。	是极大的快乐和满足	1	2	3	4	5	6	7	是痛苦和烦恼的源泉
8.	你是否经常有非常复杂的、混合的感情和念头？	非常频繁	1	2	3	4	5	6	7	几乎没有或从没有
9.	你是不是经常产生自己不愿产生的情绪？	非常频繁	1	2	3	4	5	6	7	几乎没有或从没有
10.	很多人，哪怕是很有天分的人，有时在一定环境下也会感到很失败的。在过去的经历中，你是否常有这种感受？	从来没有或较少	1	2	3	4	5	6	7	经常
11.	当遇到问题或事情，您发现自己一般都会_____。	低估或高估了它的重要性	1	2	3	4	5	6	7	非常正确地评价它
12.	每天做的这些事没什么意义，你产生这种想法的频率是？	非常频繁	1	2	3	4	5	6	7	几乎没有或从没有
13.	你是不是常有失控的感觉？	非常频繁	1	2	3	4	5	6	7	几乎没有或从没有

第四部分：您遇到网络霸凌行为时有什么感受？

请仔细阅读以下的句子，然后回顾**"过去两个星期"**的经历，按照您的实际情况，在最符合您情况的答案上**画圈**。每题只能选一个答案，答案没有对错之分。

		不符合	有时符合	符合
1.	我感到郁闷或不高兴。	0	1	2
2.	我对任何事都提不起一点儿兴趣。	0	1	2
3.	我感觉很累，只是坐着什么也不干。	0	1	2
4.	我感觉非常焦躁不安。	0	1	2
5.	我感觉自己状态不再那么好了。	0	1	2
6.	我经常哭泣。	0	1	2
7.	我发现集中注意力思考对我来说很难。	0	1	2
8.	我讨厌自己。	0	1	2
9.	我感觉自己是个坏人。	0	1	2
10.	我感觉孤独。	0	1	2
11.	我觉得没有人真的喜欢我。	0	1	2
12.	我觉得我不可能和其他孩子一样优秀。	0	1	2
13.	我把所有事都搞砸了。	0	1	2

~~~谢谢您的参与~~~

Appendix Q

SmartPLS Output: Reliability for Questionnaire (Pilot Study)

Reliability

Cybervictimization

Case Processing Summary

		N	%
	Valid	28	93.3
Cases	Excluded[a]	2	6.7
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.805	11

Reliability

Sense of coherence

Case Processing Summary

		N	%
	Valid	29	96.7
Cases	Excluded[a]	1	3.3
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.742	13

Reliability

Depression

Case Processing Summary

		N	%
Cases	Valid	28	93.3
	Excluded[a]	2	6.7
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.880	13

Appendix R

Approval Letter from the University Scientific and Ethical Review Committee

UNIVERSITI TUNKU ABDUL RAHMAN
Wholly Owned by UTAR Education Foundation (Company No. 578227-M)

Re: U/SERC/128/2020

2 September 2020

Dr Siah Poh Chua
Department of Psychology and Counselling
Faculty of Arts and Social Science
Universiti Tunku Abdul Rahman
Jalan Universiti, Bandar Baru Barat
31900 Kampar, Perak

Dear Dr Siah,

Extension of Ethical Approval For Research Project/Protocol

We refer to your application seeking for approval on the extension of ethical approval for your research project.

We are pleased to inform you that your application has been approved under expedited review. The details of your research project are as follows:

Research Title	Relationships between Cybervictimisation and Depression: Coping Strategies as a Mediator and Sense of Coherence as a Moderator
Investigator(s)	Dr Siah Poh Chua (PI) Ms Low Sew Kim Tee Xiang Yi (UTAR Postgraduate Student)
Research Area	Social Sciences
Research Location	Secondary schools in Malaysia
No. of Subjects/Samples	600 participants (Age: 13 - 15)
Research Costs	Self-funded
Approval Validity (Extension)	14 August 2020 - 13 August 2021

The conduct of this research is subject to the following:

(1) The participants' informed consent be obtained prior to the commencement of the research;

(2) Confidentiality of participants' personal data must be maintained; and

(3) Compliance with procedures set out in related policies of UTAR such as the UTAR Research Ethics and Code of Conduct, Code of Practice for Research Involving Humans and other related policies/guidelines.

Should you collect personal data of participants in your study, please have the participants sign the attached Personal Data Protection Statement for your records.

The University wishes you all the best in your research.

Thank you.

Yours sincerely,

Professor Ts Dr Faidz bin Abd Rahman
Chairman
UTAR Scientific and Ethical Review Committee

c.c   Dean, Faculty of Arts and Social Science
       Director, Institute of Postgraduate Studies and Research

Kampar Campus : Jalan Universiti, Bandar Barat, 31900 Kampar, Perak Darul Ridzuan, Malaysia
Tel: (605) 468 8888 **Fax**: (605) 466 1313
Sungai Long Campus : Jalan Sungai Long, Bandar Sungai Long, Cheras, 43000 Kajang, Selangor Darul Ehsan, Malaysia
Tel: (603) 9086 0288 **Fax**: (603) 9019 8868
Website: www.utar.edu.my

Appendix S

Approval Letter from the Ministry of Education

KEMENTERIAN PENDIDIKAN MALAYSIA
BAHAGIAN PERANCANGAN DAN PENYELIDIKAN DASAR PENDIDIKAN
ARAS 1-4, BLOK E8
KOMPLEKS KERAJAAN PARCEL E
PUSAT PENTADBIRAN KERAJAAN PERSEKUTUAN
62604 PUTRAJAYA

TEL : 0388846591
FAKS : 0388846579

Ruj. Kami : KPM.600-3/2/3-eras(8977)
Tarikh : 2 Januari 2021

TEE XIANG YI
NO. KP :

1441, JALAN SEKSYEN 1/4, BANDAR BARAT
31900 KAMPAR
PERAK

Tuan,

KELULUSAN BERSYARAT UNTUK MENJALANKAN KAJIAN :
RELATIONSHIPS BETWEEN CYBERBULLYING AND DEPRESSION: COPING STRATEGIES AS A MEDIATOR AND SENSE OF COHERENCE AS A MODERATOR

Perkara di atas adalah dirujuk.

2.   Sukacita dimaklumkan bahawa permohonan tuan untuk menjalankan kajian seperti di bawah telah diluluskan dengan syarat :

" **PENGUTIPAN DATA TERMASUK SECARA DALAM TALIAN (CONTOH: GOOGLE FORM) PERLU MENDAPATKAN KEBENARAN PENGARAH JPN DAN PERTIMBANGAN PENTADBIR SEKOLAH. PENYELIDIK MESTI MENDAPATKAN KEBENARAN BERTULIS DARIPADA IBU BAPA /PENJAGA MURID YANG DILIBATKAN DALAM KAJIAN INI. "**

3.   Kelulusan adalah berdasarkan kepada kertas cadangan penyelidikan dan instrumen kajian yang dikemukakan oleh tuan kepada bahagian ini. Walau bagaimanapun kelulusan ini bergantung kepada kebenaran Jabatan Pendidikan Negeri dan Pengetua / Guru Besar yang berkenaan.

4.   Surat kelulusan ini sah digunakan bermula dari **29 Disember 2021** hingga **20 Jun 2021**

5.   Tuan dikehendaki menyerahkan senaskhah laporan akhir kajian dalam bentuk *hardcopy* bersama   salinan *softcopy* berformat pdf dalam CD kepada Bahagian ini.Tuan juga diingatkan supaya mendapat kebenaran terlebih dahulu daripada Bahagian ini sekiranya sebahagian atau sepenuhnya dapatan kajian tersebut hendak diterbitkan di mana-mana forum, seminar atau diumumkan kepada media massa.

Sekian untuk makluman dan tindakan tuan selanjutnya. Terima kasih.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

Ketua Penolong Pengarah Kanan
Sektor Penyelidikan dan Penilaian Dasar
b.p. Pengarah
Bahagian Perancangan dan Penyelidikan Dasar Pendidikan
Kementerian Pendidikan Malaysia

salinan kepada:-

JABATAN PENDIDIKAN NEGERI SEMBILAN
JABATAN PENDIDIKAN PERAK
JABATAN PENDIDIKAN SELANGOR
JABATAN PENDIDIKAN SARAWAK

* SURAT INI DIJANA OLEH KOMPUTER DAN TIADA TANDATANGAN DIPERLUKAN *

Appendix T

SPSS Output: Frequency Tables for Demographic Information

Frequency Table

Language

		Frequency	Percent	Valid Percent	Cumulative Percent
	1 BM	228	63.9	63.9	63.9
Valid	2 Chinese	129	36.1	36.1	100.0
	Total	357	100.0	100.0	

Format

		Frequency	Percent	Valid Percent	Cumulative Percent
	1 Online	99	27.7	27.7	27.7
Valid	2 Paper	258	72.3	72.3	100.0
	Total	357	100.0	100.0	

State

		Frequency	Percent	Valid Percent	Cumulative Percent
	1 Southern	168	47.1	47.1	47.1
	2 Northern	35	9.8	9.8	56.9
Valid	3 East Malaysia	20	5.6	5.6	62.5
	4 Central	134	37.5	37.5	100.0
	Total	357	100.0	100.0	

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 13	93	26.1	26.1	26.1
	2 14	50	14.0	14.0	40.1
	3 15	214	59.9	59.9	100.0
	Total	357	100.0	100.0	

Ethnicity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Malay	123	34.5	34.6	34.6
	2 Chinese	156	43.7	43.9	78.6
	3 Indian	72	20.2	20.3	98.9
	4 Others	4	1.1	1.1	100.0
	Total	355	99.4	100.0	
Missing	-1	2	.6		
Total		357	100.0		

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Male	143	40.1	40.2	40.2
	2 Female	213	59.7	59.8	100.0
	Total	356	99.7	100.0	
Missing	-1	1	.3		
Total		357	100.0		

Appendix U

SPSS Output: Assumption Testing

Descriptives

Descriptive Statistics

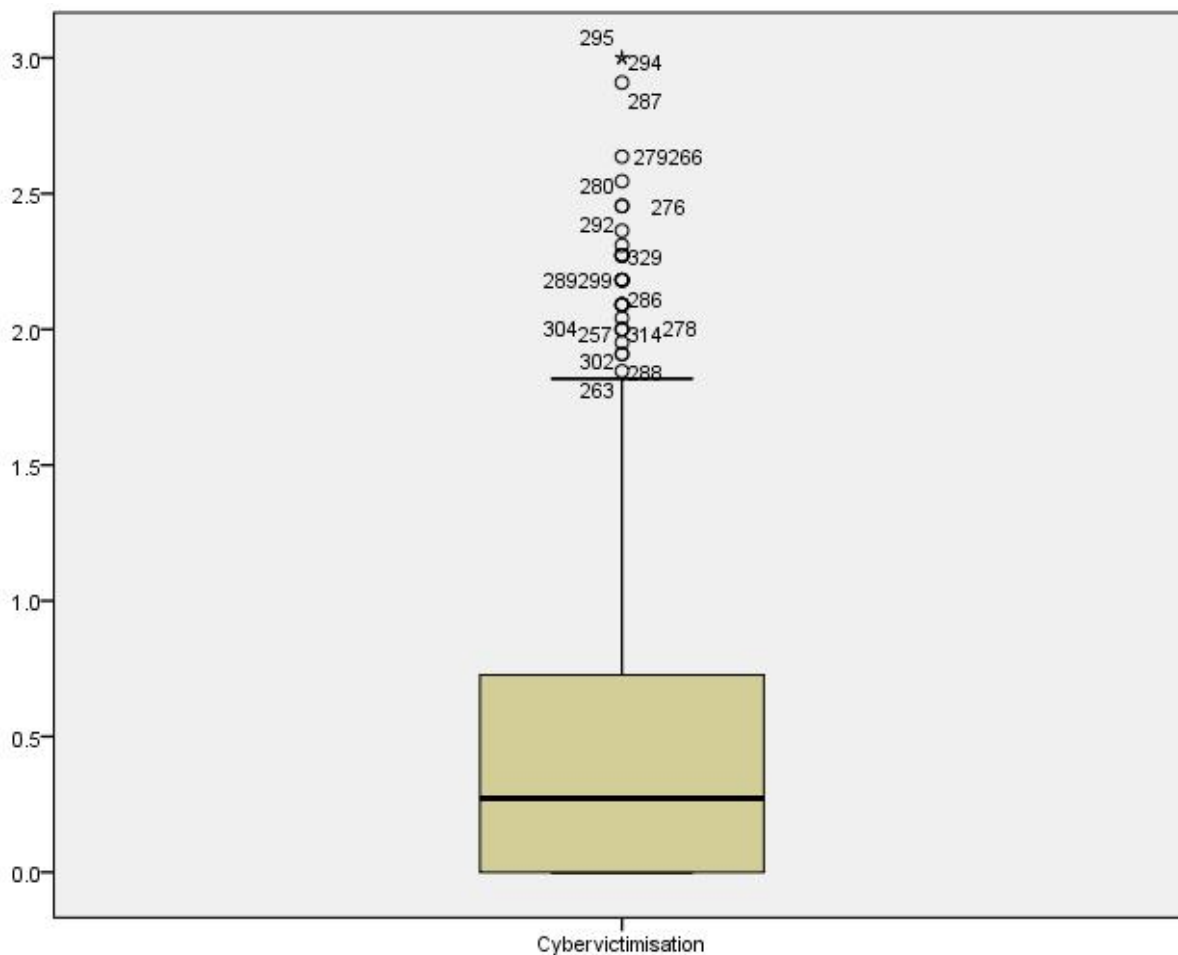|	N	Minimum	Maximum	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Cybervictimization	357	.00	3.00	.5648	.69789	.487	1.450	.129	1.274	.257
SOC	357	1	7	4.20	.944	.892	.565	.129	.578	.257
Depression	357	.00	2.00	.6157	.48989	.240	.605	.129	-.331	.257
Valid N (listwise)	357									

Explore

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Cybervictimization	357	100.0%	0	0.0%	357	100.0%
SOC	357	100.0%	0	0.0%	357	100.0%
Depression	357	100.0%	0	0.0%	357	100.0%

Extreme Values

			Case Number	Value
Cybervictimization	Highest	1	294	3
		2	295	3
		3	287	3
		4	266	3
		5	279	3
	Lowest	1	352	0
		2	350	0
		3	346	0
		4	345	0
		5	343	0[a]
SOC	Highest	1	9	90
		2	52	90

		3	19	88
		4	27	88
		5	44	87
		1	174	13
		2	186	29
	Lowest	3	185	29
		4	171	29
		5	355	30
		1	148	26
		2	174	26
	Highest	3	314	26
		4	193	25
Depression		5	93	24
		1	351	0
		2	348	0
	Lowest	3	342	0
		4	334	0
		5	326	0ª

a. Only a partial list of cases with the value 0 are shown in the table of lower
extremes.

Cybervictimization

```
Cybervictimization Stem-and-Leaf Plot

 Frequency     Stem &  Leaf

   133.00         0 .
0000000000000000000000000000000000000000000000000000000000000999999999999
    26.00         1 .  8888888888888
    20.00         2 .  7777777777
    22.00         3 .  6666666666&
    19.00         4 .  555555555
    21.00         5 .  4444444444&
    15.00         6 .  3333333&
    14.00         7 .  222222&
     6.00         8 .  111
     8.00         9 .  0000
     7.00        10 .  009&
     6.00        11 .  88&
     4.00        12 .  77
     4.00        13 .  66
      .00        14 .
     9.00        15 .  4444
     6.00        16 .  33&
     4.00        17 .  2&
     1.00        18 .  &
    32.00 Extremes    (>=1.85)
```

```
Stem width:          0
Each leaf:       2 case(s)
```

& denotes fractional leaves.

Cybervictimisation

SOC

SOC Stem-and-Leaf Plot

```
 Frequency     Stem &  Leaf

     1.00 Extremes    (=<13)
     3.00        2 .  999
     8.00        3 .  01122334
    14.00        3 .  55667778888999
    34.00        4 .  00001112222233333333344444444444444
    73.00        4 .
5555555555566666666666666677777777777777788888888888888889999999999999999
    69.00        5 .
000000000000000001111111111111112222222222222222222222223333334444444
    56.00        5 .
55555555555555556666666666777777777888888888888888888999999999
```

```
34.00          6 .  0000000000011122223333333334444444
19.00          6 .  5556667777788888999
16.00          7 .  0001111112222334
12.00          7 .  555666789999
18.00 Extremes    (>=80)
```

```
Stem width:        10
Each leaf:       1 case(s)
```


Depression

```
Depression Stem-and-Leaf Plot

 Frequency     Stem &  Leaf


    69.00         0 .
00000000000000000000000000000000000000000000000000011111111111111111111
    44.00         0 .  22222222222222222233333333333333333333333333
    39.00         0 .  444444444444444444455555555555555555555
    30.00         0 .  666666666666666667777777777777
    37.00         0 .  8888888888888899999999999999999999999
    37.00         1 .  0000000000000011111111111111111111111
    30.00         1 .  222222222222333333333333333333
    27.00         1 .  444444444444444455555555555
```

```
  16.00        1 .  6666666667777777
   7.00        1 .  8899999
  10.00        2 .  0001111111
   6.00        2 .  223333
   2.00        2 .  45
   3.00        2 .  666

Stem width:        10
Each leaf:      1 case(s)
```

GGraph

GGraph

Regression

Descriptive Statistics

	Mean	Std. Deviation	N
Depression	.6157	.48989	357
Cybervictimization	.5648	.69789	357
SOC	4.20	.944	357

Correlations

		Depression	Cybervictimization	SOC
Pearson Correlation	Depression	1.000	.385	-.477
	Cybervictimization	.385	1.000	-.269
	SOC	-.477	-.269	1.000
Sig. (1-tailed)	Depression	.	.000	.000
	Cybervictimization	.000	.	.000
	SOC	.000	.000	.
N	Depression	357	357	357
	Cybervictimization	357	357	357
	SOC	357	357	357

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	SOC, Cybervictimization[b]	.	Enter

a. Dependent Variable: Depression

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.546[a]	.298	.294	.41163	1.500

a. Predictors: (Constant), SOC, Cybervictimization

b. Dependent Variable: Depression

ANOVAª

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	25.455	2	12.728	75.117	.000ᵇ
	Residual	59.981	354	.169		
	Total	85.437	356			

a. Dependent Variable: Depression

b. Predictors: (Constant), SOC, Cybervictimization

Coefficientsª

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	1.383	.109		12.643	.000	1.168	1.598		
	Cybervictimization	.194	.032	.276	5.979	.000	.130	.258	.928	1.078
	SOC	-.209	.024	-.402	-8.698	.000	-.256	-.161	.928	1.078

a. Dependent Variable: Dep

Collinearity Diagnosticsª

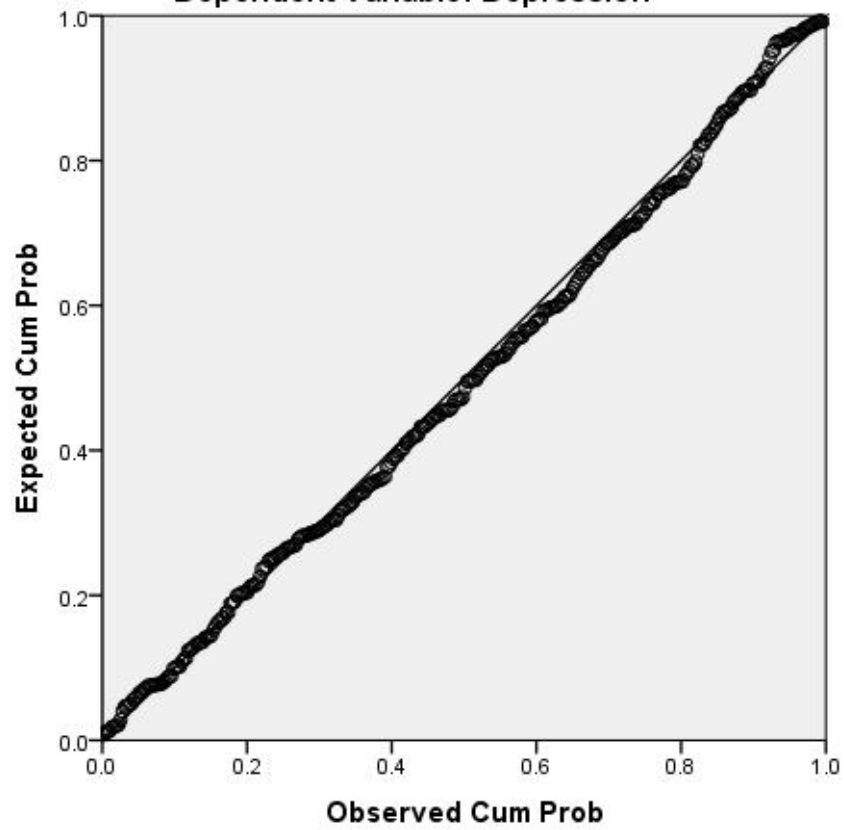| Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	Cybervictimization	SOC
1	1	2.466	1.000	.01	.06	.01
	2	.513	2.192	.01	.81	.01
	3	.021	10.778	.99	.13	.98

a. Dependent Variable: Depression
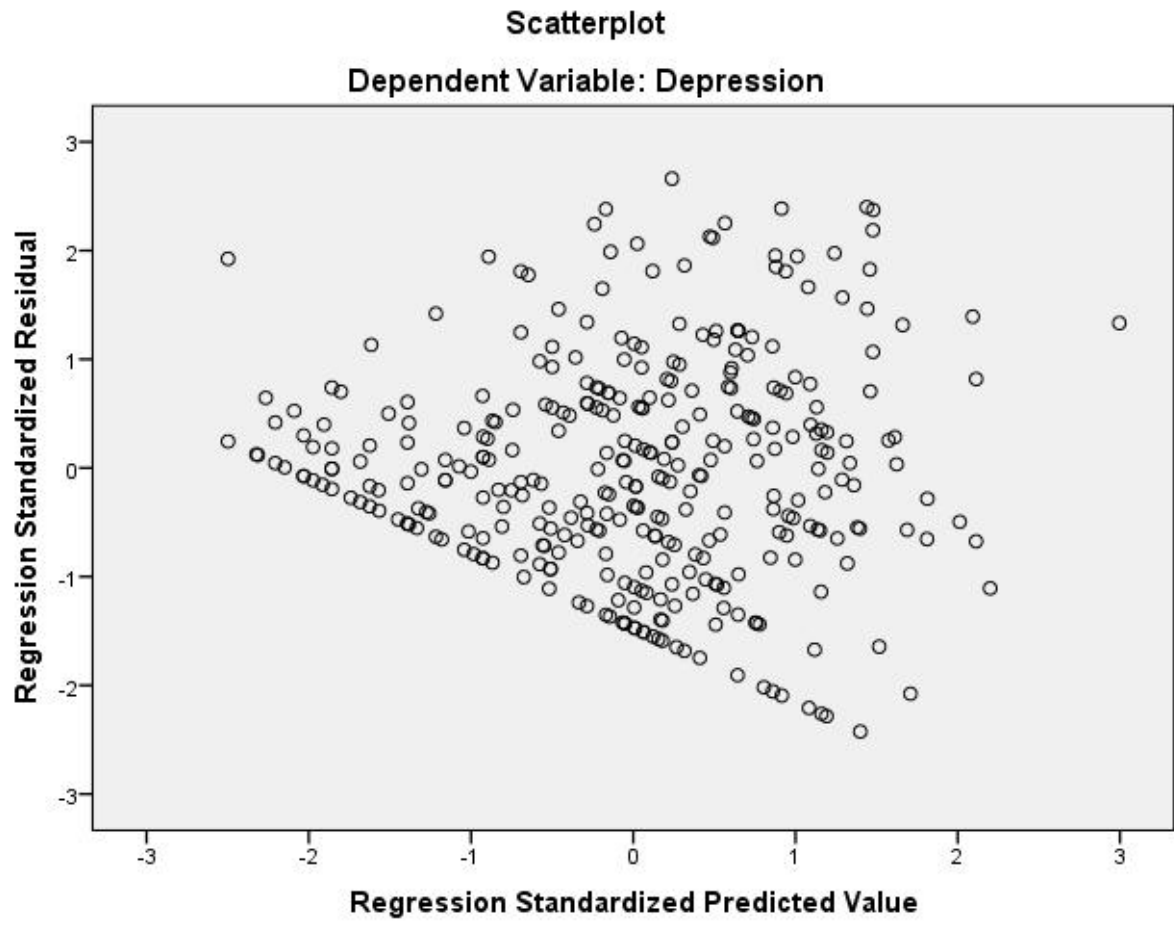
Residuals Statisticsª

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-.0616	1.4387	.6157	.26740	357
Residual	-.98923	1.07657	.00000	.41047	357
Std. Predicted Value	-2.533	3.078	.000	1.000	357
Std. Residual	-2.403	2.615	.000	.997	357

a. Dependent Variable: Depression

Charts

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: Depression

Scatterplot

Dependent Variable: Depression

Appendix V

SPSS Output: Multiple Linear Regression

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Eth, Gender, Ages, States, Lang, Format[b]	.	Enter

a. Dependent Variable: Depression

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.263[a]	.069	.053	.47453

a. Predictors: (Constant), Eth, Gender, Ages, States, Lang, Format

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.822	6	.970	4.309	.000[b]
	Residual	78.138	347	.225		
	Total	83.961	353			

a. Dependent Variable: Depression

b. Predictors: (Constant), Eth, Gender, Ages, States, Lang, Format

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.341	.211		1.615	.107
	Format	.065	.126	.060	.518	.605
	Lang	-.007	.067	-.007	-.105	.916
	States	-.170	.121	-.145	-1.404	.161
	Ages	.074	.059	.074	1.241	.215
	Gender	.108	.052	.109	2.084	.038
	Eth	.237	.064	.231	3.676	.000

a. Dependent Variable: Depression

Appendix W
Extracts of SmartPLS Output

Composite Reliability

Mean, STDEV, T-Values, P-Values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Control1	1.000	1.000	0.000		
Control2	1.000	1.000	0.000		
Cybervictimization	0.918	0.917	0.008	121.015	0.000
Depression	0.922	0.922	0.006	147.313	0.000
Moderating Effect 1	1.000	1.000	0.000		
SOC	0.800	0.795	0.022	37.012	0.000

Confidence Intervals

	Original Sample (O)	Sample Mean (M)	5.0%	95.0%
Control1	1.000	1.000	1.000	1.000
Control2	1.000	1.000	1.000	1.000
Cybervictimization	0.918	0.917	0.904	0.929
Depression	0.922	0.922	0.911	0.932
Moderating Effect 1	1.000	1.000	1.000	1.000
SOC	0.800	0.795	0.757	0.827

Confidence Intervals Bias Corrected

	Original Sample (O)	Sample Mean (M)	Bias	5.0%	95.0%
Control1	1.000	1.000	0.000	1.000	1.000
Control2	1.000	1.000	0.000	1.000	1.000
Cybervictimization	0.918	0.917	-0.001	0.905	0.929
Depression	0.922	0.922	0.000	0.911	0.932
Moderating Effect 1	1.000	1.000	0.000	1.000	1.000
SOC	0.800	0.795	-0.005	0.765	0.831

Heterotrait-Monotrait Ratio (HTMT)

Confidence Intervals

	Original Sample (O)	Sample Mean (M)	5.0%	95.0%
Control2 -> Control1	0.017	0.044	0.003	0.107
Cybervictimization -> Control1	0.055	0.083	0.047	0.139
Cybervictimization -> Control2	0.153	0.169	0.115	0.240
Depression -> Control1	0.101	0.118	0.073	0.182
Depression -> Control2	0.231	0.231	0.147	0.315
Depression -> Cybervictimization	0.408	0.411	0.336	0.488
Moderating Effect 1 -> Control1	0.076	0.075	0.009	0.150
Moderating Effect 1 -> Control2	0.006	0.047	0.003	0.116
Moderating Effect 1 -> Cybervictimization	0.174	0.191	0.105	0.294
Moderating Effect 1 -> Depression	0.044	0.090	0.049	0.164
SOC -> Control1	0.115	0.145	0.101	0.200
SOC -> Control2	0.256	0.265	0.192	0.339
SOC -> Cybervictimization	0.324	0.350	0.301	0.399
SOC -> Depression	0.575	0.572	0.501	0.639
SOC -> Moderating Effect 1	0.378	0.375	0.218	0.532

Confidence Intervals Bias Corrected

	Original Sample (O)	Sample Mean (M)	Bias	5.0%	95.0%
Control2 -> Control1	0.017	0.044	0.027	0.000	0.044
Cybervictimization -> Control1	0.055	0.083	0.029	0.021	0.062
Cybervictimization -> Control2	0.153	0.169	0.017	0.099	0.206
Depression -> Control1	0.101	0.118	0.017	0.059	0.145
Depression -> Control2	0.231	0.231	0.000	0.147	0.314
Depression -> Cybervictimization	0.408	0.411	0.003	0.329	0.483
Moderating Effect 1 -> Control1	0.076	0.075	0.000	0.011	0.155
Moderating Effect 1 -> Control2	0.006	0.047	0.041	0.000	0.009
Moderating Effect 1 -> Cybervictimization	0.174	0.191	0.017	0.088	0.263
Moderating Effect 1 -> Depression	0.044	0.090	0.046	0.029	0.040
SOC -> Control1	0.115	0.145	0.031	0.054	0.131
SOC -> Control2	0.256	0.265	0.009	0.177	0.319
SOC -> Cybervictimization	0.324	0.350	0.026	0.263	0.347
SOC -> Depression	0.575	0.572	-0.003	0.504	0.641
SOC -> Moderating Effect 1	0.378	0.375	-0.004	0.223	0.536

Collinearity Statistics (VIF)

Outer VIF Values

	VIF
B10_1	1.614
B11_1	1.971
B1_1	2.092
B2_1	2.753
B3_1	1.758
B4_1	2.615
B5_1	3.916
B6_1	3.861
B7_1	2.574
B8_1	1.997
B9_1	2.305
Cybervictimization * SOC	1.000
D11_1	1.251
D12_1	1.696
D13_1	1.832
D1_1	1.369
D5_1	1.614
D6_1	1.882
D8_1	1.648
D9_1	1.764
E10_1	1.981
E11_1	1.705
E12_1	1.853
E13_1	2.217
E1_1	1.622
E2_1	1.690
E3_1	1.648
E4_1	1.989
E5_1	1.968
E6_1	1.697
E7_1	1.545
E8_1	2.211
E9_1	1.782
Eth	1.000
Gender	1.000
RvD10_1	1.314
RvD2_1	1.283
RvD3_1	1.753
RvD4_1	1.833
RvD7_1	1.247

Inner VIF Values

	Control1	Control2	Cybervictimization	Depression	Moderating Effect 1	SOC
Control1				1.014		
Control2				1.088		
Cybervictimization				1.274		
Depression						
Moderating Effect 1				1.282		
SOC				1.439		

Final Results

Path Coefficients

Mean, STDEV, T-Values, P-Values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Control1 -> Depression	0.043	0.042	0.043	1.000	0.159
Control2 -> Depression	0.055	0.051	0.043	1.271	0.102
Cybervictimization -> Depression	0.229	0.229	0.048	4.805	0.000
Moderating Effect 1 -> Depression	-0.113	-0.116	0.064	1.776	0.038
SOC -> Depression	-0.479	-0.491	0.047	10.091	0.000

Confidence Intervals

	Original Sample (O)	Sample Mean (M)	5.0%	95.0%
Control1 -> Depression	0.043	0.042	-0.028	0.112
Control2 -> Depression	0.055	0.051	-0.020	0.122
Cybervictimization -> Depression	0.229	0.229	0.149	0.307
Moderating Effect 1 -> Depression	-0.113	-0.116	-0.218	-0.009
SOC -> Depression	-0.479	-0.491	-0.568	-0.413

Confidence Intervals Bias Corrected

	Original Sample (O)	Sample Mean (M)	Bias	5.0%	95.0%
Control1 -> Depression	0.043	0.042	-0.001	-0.024	0.116
Control2 -> Depression	0.055	0.051	-0.004	-0.013	0.130
Cybervictimization -> Depression	0.229	0.229	0.000	0.148	0.306
Moderating Effect 1 -> Depression	-0.113	-0.116	-0.004	-0.207	0.000
SOC -> Depression	-0.479	-0.491	-0.012	-0.545	-0.389

Quality Criteria

R Square

Mean, STDEV, T-Values, P-Values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Depression	0.368	0.390	0.040	9.131	0.000

Confidence Intervals

	Original Sample (O)	Sample Mean (M)	5.0%	95.0%
Depression	0.368	0.390	0.325	0.456

Confidence Intervals Bias Corrected

	Original Sample (O)	Sample Mean (M)	Bias	5.0%	95.0%
Depression	0.368	0.390	0.022	0.286	0.414

f Square

Mean, STDEV, T-Values, P-Values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Control1 -> Depression	0.003	0.006	0.007	0.393	0.347
Control2 -> Depression	0.004	0.007	0.008	0.562	0.287
Cybervictimization -> Depression	0.065	0.070	0.030	2.152	0.016
Moderating Effect 1 -> Depression	0.010	0.015	0.013	0.779	0.218
SOC -> Depression	0.252	0.276	0.067	3.752	0.000

Confidence Intervals

	Original Sample (O)	Sample Mean (M)	5.0%	95.0%
Control1 -> Depression	0.003	0.006	0.000	0.021
Control2 -> Depression	0.004	0.007	0.000	0.023
Cybervictimization -> Depression	0.065	0.070	0.027	0.125
Moderating Effect 1 -> Depression	0.010	0.015	0.000	0.041
SOC -> Depression	0.252	0.276	0.174	0.392

Confidence Intervals Bias Corrected

	Original Sample (O)	Sample Mean (M)	Bias	5.0%	95.0%
Control1 -> Depression	0.003	0.042	0.039	-0.113	0.031
Control2 -> Depression	0.004	0.051	0.047	-0.116	0.029
Cybervictimization -> Depression	0.065	0.229	0.164	0.042	0.042
Moderating Effect 1 -> Depression	0.010	-0.116	-0.127	0.035	0.132
SOC -> Depression	0.252	-0.491	-0.743	-0.676	-0.676

Model_Fit

SRMR

Confidence Intervals

	Original Sample (O)	Sample Mean (M)	95%	99%
Saturated Model	0.094	0.047	0.051	0.053
Estimated Model	0.094	0.047	0.051	0.053