

Cyber-bullying among adolescent at school: A literature review

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Abstract- *Changes in aggressive student behavior in the digital age have modernized a new type of bullying, cyber-bullying. Cyber-bullying has become a new spotlight for scientists because it is a new form of bullying in the digital age. Many studies that have discussed cyber-bullying include the causes of cyber-bullying, the impact of cyber-bullying, and the protective actions of cyber-bullying. However, the research is still discussed separately. This study uses the literature review method to reveal the causes of cyber-bullying, the impact of cyber-bullying, and the protective actions of cyber-bullying in schools. There are 52 articles on Taylor and Francis's online and The National Center for Biotechnology Information. The main findings show that cyber-bullying is caused by family factors, social skills, etc. Cyber-bullying can cause emotional problems such as symptoms of depression and anxiety. Cyber-bullying protective measures include limiting internet access, monitoring student activity, etc. This study has implications for school stakeholders to determine methods of reducing cyber-bullying in schools.*

Keywords: *cyber-bullying, cyber-victimization, bullying, school adolescent, digital aggression,*

1. Introduction

Over the last few years, studies on cyber-bullying and cyber-victimization have expanded in various countries. Meanwhile, traditional-bullying, such as school bullying and school victimization among school children, also continues. The phenomenon of cyber-bullying has become a new spotlight for scientists because it is a new form of bullying in the digital age. Technological developments have made the potential for individuals as new media to intimidate someone (Kowalski, Limber, & Agatston, 2008). Besides, developments in communication and information technology have significantly increased cases of bullying (Calvete, Orue, Estévez, Villardón, & Padilla, 2010; Kowalski et al., 2008). This condition makes sense because indirect intimidation is considered the safest and most convenient compared to traditional bullying. Bullying can freely intimidate victims without their identities are known (Antoniadou & Kokkinos, 2015). Even the perpetrators can quickly disseminate acts of intimidation to everyone through cyberspace media. Cyber-bullying has a more dangerous effect than traditional-bullying; it can even encourage victims to react reactively to accidents and deaths. This cyber-bullying action also often occurs in the school environment, especially on students—for example, student bullying with students and students with teachers. However, acts of intimidation are feared to occur between students and students. Therefore, understanding and taking precautions about cyber-bullying is a crucial thing to do by the teacher as a student facilitator at school.

Many studies have discussed cyber-bullying, such as investigating the prevalence of cyber-bullying and cyber-victimization, the relationship of cyber-bullying with other antecedent factors (such as personal and contextual factors), motives for participation in cyber-bullying actions, and the practice of prevention and intervention efficient for cyber-bullying (Şahin, 2012). Besides, bullying behavior often occurs in the school environment, and this condition is very disruptive to the learning situation at school. Teachers are concerned about the impact of cyber-bullying, which could lead to severe problems at school. The teachers realize that they cannot directly supervise

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students in using information and communication technology. The development of information and communication technology allows students to bully without their identities being known. Anyone and anytime can access bullying content openly carried out by the perpetrators through internet technology. This is what teachers are concerned about the impact of cyber-bullying. Cyber-bullying can have a more severe effect on mental health problems and academic problems than traditional-bullying. Even in some countries have resulted in deaths such as suicide (Kowalski et al., 2008).

Cyber-bullying often occurs with victims who have social skills and peer relations problems. Although information and communication technology as a medium of communication between users, students who have offline relations problems will tend to become victims of cyber-bullying (Seepersad, 2004), this means students need to be equipped with excellent social skills through education at school. Thus, teachers need to understand thoroughly the phenomenon of cyber-bullying that occurs in the school environment. This understanding includes how the event of cyber-bullying can occur, the impact that arises due to cyber-bullying, and how protective actions against cyber-bullying actions on students. This information is useful for teachers to control student behavior through learning in school. Besides, it allows teachers to develop curriculum and learning strategies to improve students' social skills, both offline and online social skills. This literature review study aims to discuss the definition of cyber-bullying, the causes of cyber-bullying, the impact of cyber-bullying, and the protective factors of cyber-bullying.

2. Methods

This study is a type of literature review study. The selection of this study approach is intended to reveal the definition of cyber-bullying, the causes of cyber-bullying, the impact of cyber-bullying actions, and the protective factors of cyber-bullying activities. This literature review method refers to grounded theory (Wolfswinkel, Furtmueller-Ettinger, & Wilderom, 2013) that allows researchers to identify gaps in the field and to build theoretical models based on the results that emerge. The literature review process in this study contained five steps of the literature review method which included: 1) determine the criteria; 2) search; 3) select; 4) analysis (synthesis); and 5) presentation (Mahfud, Pardjono, & Lastariwati, 2019; Wolfswinkel et al., 2013).

This literature review study uses the criteria for topics on cyber-bullying, literature sources in the form of journals, the year the articles were published from 2010 to 2019. The search for articles in this study uses a search on the Taylor and Francis online page (<https://www.tandfonline.com>) and The National Center for Biotechnology Information (<https://www.ncbi.nlm.nih.gov>). The article search criteria are shown in Table 1. A keyword search using the keywords "cyber-bullying" OR "cyber-victimization" OR "predictor of cyber-bullying" OR "influence of cyber-bullying" OR "impact of cyber-bullying" OR "Protective of cyber-bullying."

Table 1. Article Search Criteria

No	Aspect	Taylor and Francis online	The National Center for Biotechnology Information
1	Search term	"cyber-bullying" OR "cyber-victimization" OR "predictor of cyber-bullying" OR "influence of cyber-bullying" OR "impact of cyber-bullying" OR "protective of cyber-bullying"	(((((cyber bullying) OR cyber victimization) OR predictor of cyber bullying) OR influence of cyber bullying) OR impact of cyber bullying) OR protective of cyber bullying
2	Subject	Education	Education
3	Publication period	2010 - 2019	2010-2019
4	Publication type	Journal	Journal

3. Results

Search results on the Taylor and Francis online page (<https://www.tandfonline.com>) and The National Center for Biotechnology Information (<https://www.ncbi.nlm.nih.gov>) found 597 articles consisting of 266 articles from Taylor and Francis online and 331 articles from The National Center for Biotechnology Information (see Figures 1 and 2). Next, we screened articles based on the focus of this study. We found 52 articles consisting of 28 articles from Taylor and Francis online and 24 articles from The National Center for Biotechnology Information.

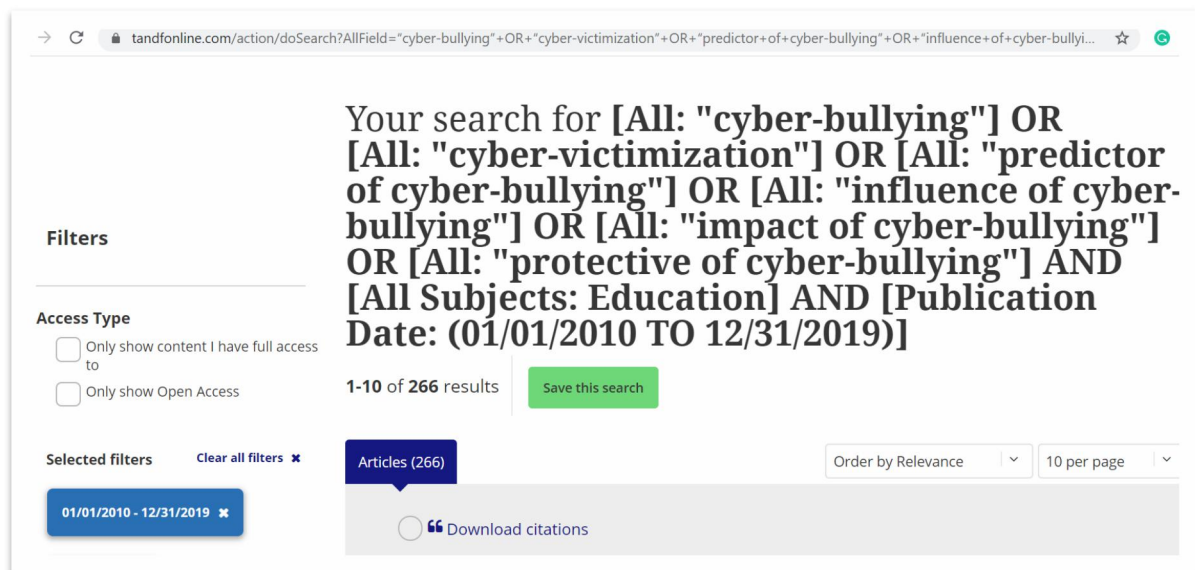


Figure 1. Search results for articles on Taylor and Francis Online.

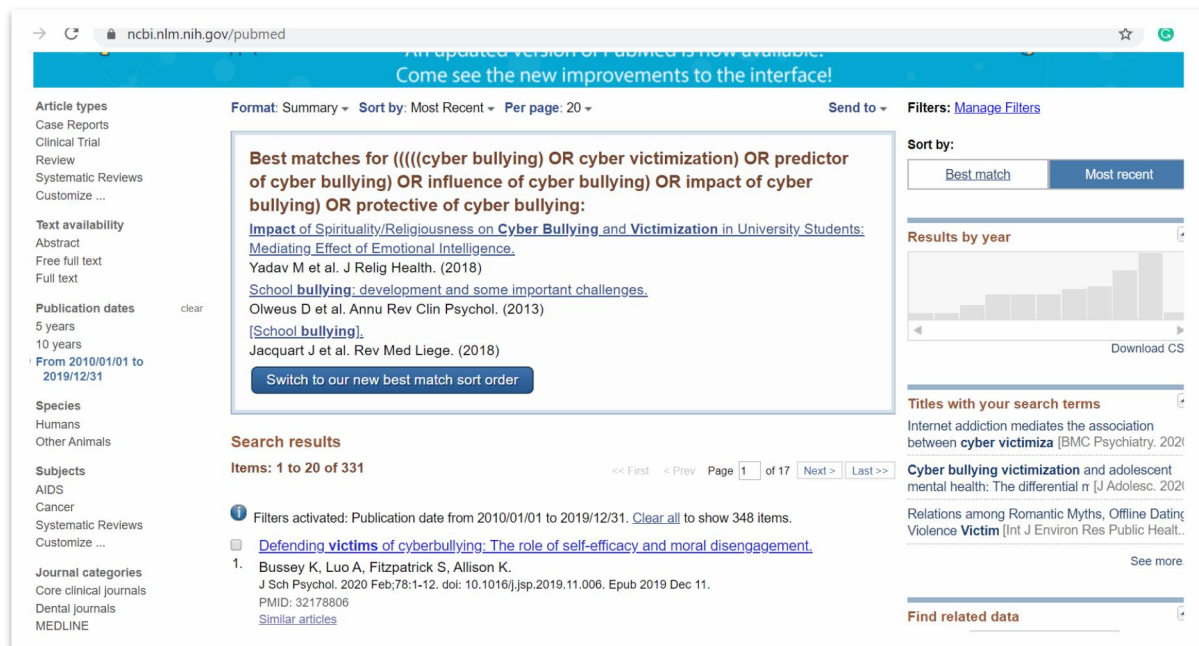


Figure 1. Search results for the article at The National Center for Biotechnology Information.

The results of the review are presented in Table 2, Table 3, and Table 4. We group based on the focus of this study, which includes the causes of cyber-bullying in-school adolescents (see Table 2), the impact of cyber-bullying on school adolescents (see Table 3), and factors protective measures of cyber-bullying in-school adolescents (see Table 4).

Table 2. Causes of Cyber-bullying in School Adolescents

Dimension	Factor	Source
School	School	Paez (2018); Livazovic and Ham (2019)
Family	<ul style="list-style-type: none"> Satisfaction with family relationships 	Paez (2018); Alvarez-Garcia, Nunez,

	<ul style="list-style-type: none"> • Acceptance by peers • Feelings about school • Pressure from school work 	Gonzalez-Castro, Rodriguez, and Cerezo (2019); Livazovic and Ham (2019); Wright and Wachs (2019b)
	Parents	Campbell, Whiteford, and Hooijer (2019)
	Parenting style	Kokkinos et al. (2016); Martinez-Ferrer et al. (2019)
Teacher	Teachers understanding	Campbell et al. (2019)
Friendship	Friendship quality	Foody, McGuire, Kuldass, and O'Higgins Norman (2019); Livazovic and Ham (2019)
Personal Factors	Psychological loneliness	Al Qudah et al. (2020)
	<ul style="list-style-type: none"> • Internet usage characteristics • Internet addiction 	Simsek et al. (2019)
	Popularity	Grading et al. (2012); Wright (2014)
	Problem behaviours	Lester et al. (2012)
	<ul style="list-style-type: none"> • Moral disengagement • Morally based self-esteem 	Robson and Witenberg (2013)
	ICT self-efficacy	Musharraf, Bauman, Anis-Ul-Haque, and Malik (2019)
	Alcohol use	Chan, La Greca, and Peugh (2019); Duerksen and Woodin (2019)
	Moral disengagement	Bussey, Fitzpatrick, and Raman (2015)

Table 3. Impact of Cyber-bullying on School Adolescents

Dimension	Factor	Source
Dampak psikologi cyber-bullying	Depression	Ramsey, DiLalla, and McCrary (2016); Sjursø, Fandrem, and Roland (2016); Uusitalo-Malmivaara and Lehto (2016); Wright (2017); Duerksen and Woodin (2019); Wright and Wachs (2019a)
	Anxiety	Ramsey et al. (2016); Sjursø et al. (2016); Uusitalo-Malmivaara and Lehto (2016); Wright (2017); Wright and Wachs (2019a)
	Low self-esteem	Aoyama, Yanagida, and Wright (2018); Wong-Lo, Bullock, and Gable (2011)
	Helplessness	
	Social anxiety	
	Alienation	
	Social isolation	
	Felt sadder	Aoyama et al. (2018)
	More embarrassed	
	Feeling angrier	
	Alcohol use	Duerksen and Woodin (2019)
	Perceived stress	
	Feeling unpopular	Wachs (2012)

Dimension	Factor	Source
	Being friendless	Wachs (2012); Wright and Wachs (2019a)
	Loneless	
	Moral disengagement	Smith (2011); Wachs (2012)
	Socioemotional distress	Pieschl, Kuhlmann, and Porsch (2015)
	Emotional development	Peled (2019)
Perilaku Reaktif Cyber-bullying	Suicide ideas and suicide attempts	Hinduja and Patchin (2010); Bauman, Toomey, and Walker (2013); Litwiller and Brausch (2013); Peng et al. (2019)
	Violent behavior	Litwiller and Brausch (2013)
	Unsafe sexual behavior	
Academic problem	Academic problem	Wong-Lo et al. (2011); Peled (2019)
Social difficult/ Social development	Social difficult/ Social development	Smith (2011); Wachs (2012); Peled (2019)

Table 4. Cyberbullying protective measures

Factor	Source
Peran Lingkungan Sekolah	Fedewa and Ahn (2011); Wong-Lo et al. (2011); Wachs (2012); Kowalski et al. (2014); Hellfeldt et al. (2019)
Peran Keluarga	Cook et al. (2010); Lereya et al. (2013); Kowalski et al. (2014); Tippet and Wolke (2014); B. H. W. Guo, Yiu, and González (2016); Chen et al. (2017); Hellfeldt et al. (2019)
Peran Teman Sebaya	Seepersad (2004); Cook et al. (2010); Kowalski et al. (2014); B. H. W. Guo et al. (2016); Hellfeldt et al. (2019)
Peran individu	Cook et al. (2010); Kowalski et al. (2014); B. H. W. Guo et al. (2016)
Other program	Catanzaro (2011)
a. No-blame intervention	
b. Method of shared concern	
c. Peer mentors and empathy training	
d. Collaborative mentorship	
e. Systemic thinking	
The ViSC Social Competence Program	Grading et al. (2015)

4. Discussion

4.1. The meaning of Cyber-bullying

The meaning of cyber-bullying is inseparable from the definition of traditional bullying, both of which have the same content meaning, namely oppression. Olweus (1993) states that bullying or abuse is an aggressive behavior that is intentionally and repeatedly directed at individuals who have less power than the attacker. Bullying has various types, such as bullying in physical, verbal, and social forms. Bullying in the material form includes hitting, pushing, spitting, and the like. Bullying in the oral form includes mocking, calling names, threatening, and the like. Also, bullying in the social form consists of the spread of rumors (slander), exclusion of peer groups, and the like. The three types of bullying usually often occur when face to face or face to face with the perpetrators of bullying. This type of

bullying is known as traditional bullying (Vaillancourt et al., 2010). Meanwhile, forms of bullying that do not require direct meetings can also occur as recently known as cyber-bullying.

All technological developments provide various benefits and unexpected losses. This also includes impacts on the school environment, and technological developments have impacted changes in the way students learn, especially in involving technology. However, the other side of technology development also has a negative impact; for example, technology is used as a vehicle or vehicle for cyber-bullying. The development of information and technology has had a lot of influence on this new form of bullying. Ease of internet access and other technological devices such as mobile phones also contributed to the emergence of new forms of bullying. The expansion of the use of technology and communication has influenced relationships between individuals. Rapid changes in communication and social interaction have significant effects, both positive and negative, including encouraging the emergence of cyber-bullying (Kowalski et al., 2008).

Cyber-bullying means humiliating, threatening, sexually harassing, or social exclusion using information and communication technology (Williams & Guerra, 2007). For example, posting pictures or embarrassing comments about someone or posing as someone dangerous. Cyber-bullying attacks victims by sending demeaning, threatening messages, and images delivered using websites, instant messages, blogs, chat rooms, cellphones, websites, e-mails, and personal online profiles (Blair, 2003; Shariff, 2006). So it can be understood that cyber-bullying is different from traditional bullying. This situation creates new challenges for educators in the learning process in schools. Teachers must recognize changes in student behavior in the digital age. Besides, teachers are faced with the challenge of keeping students safe in school both in physical space and in virtual space, which has become a hazardous environment. Until now, there has been no regulation and supervision on security in the virtual room.

Generally, cyberbullying is seen as a more comfortable type of oppression because cyber-bullying utilizes the characteristics of information and communication technology to intimidate someone. The perpetrators of cyber-bullying can hide their identities by using anonymous characters and hidden internet protocol addresses, and this condition makes the victims very insecure and unsettled. Also, cyber-bullying can be done massively. The perpetrators of cyber-bullying can invite others to do cyber-bullying together to victims (Shariff, 2006). Technological advances like this have made this bullying very difficult to monitor or detect and make the bullying feel to have high control.

The act of cyber-bullying, indeed has similarities with traditional-bullying; the difference is only in the media used. Previous studies have shown that cyber-bullying and traditional-bullying have a significant relationship (Hinduja & Patchin, 2008). Students involved in cyber-bullying actions are also involved in traditional-bullying activities (Casas, Del Rey, & Ortega-Ruiz, 2013). Other studies, such as those conducted by O'Moore (2012) report that as many as 67.4% of cyber-bullies are involved in other forms of intimidation. And as many as 32% of cyber-bullies claim to have been victims of traditional-bullying. The majority (71%) of cyber victims are traditional victims, while more than a quarter (28.9%) are also traditional bullies (O'Moore, 2012). However, this study is also still being debated because not all studies show the same thing. Typically, cyber-bullying actors are students who cannot carry out acts of bullying directly because of fear, so they prefer to do cyber-bullying by hiding their identities. Another scholar (Hemphill et al., 2012) revealed that not all students involved in cyber-bullying were previously engaged in traditional-bullying acts.

4.2. Causes of Cyber-bullying in School Adolescents

The motives of individuals to carry out cyber-bullying are very diverse including reasons for revenge, reactions to jealousy, prejudice, intolerance, shame, pride, guilt, and anger (Calvete et al., 2010; Hoff & Mitchell, 2009; Jones, Manstead, & Livingstone, 2011). Besides, the factors causing cyber-bullying can arise from individual and situational factors. Personal factors include problem behavior (Lester et al., 2012), moral disengagement, morally based self-esteem (Robson & Witenberg, 2013), perception of popularity (Gradinger et al., 2012), usage characteristics and Internet addiction (Simsek et al., 2019). Meanwhile, situational factors include parenting style (Kokkinos et al., 2016), satisfaction with family relationships, acceptance by peers, and pressure from school work (Paez, 2018). Previous studies state that contextual factors, especially those related to family, are involved in cyber-bullying incidents (Kokkinos et al., 2016). Psychological autonomy, warm involvement, and on-line disinhibition can significantly predict cyber-bullying (Kokkinos et al., 2016). Students who feel comfortable and happy with their families will help them not get involved in cyber-bullying. In this context, the role of parenting and mentoring of parents is significant.

Other scholars show that adolescents with low acceptance by their peers and negative views about the school are more likely to be involved in cyber-bullying compared to children with high approval and positive opinions about school (Paez, 2018). Besides, psychological loneliness is the best predictor of cyber-bullying (Al Qudah et al., 2020). This condition occurs because students who feel not accepted by their peers and feel lonely might see cyber-bullying as a way to adjust to school. Also, students might see cyber-bullying as a method to improve their social status among their peers. Cyber-bullying occurs because of relationship problems and is not related to relationship problems (Hoff & Mitchell, 2009). The leading causes in the relationship category are caused by breakups (41 percent), jealousy (20 percent), intolerance (16 percent), and gang up (14 percent). The results of this study imply that the inability of students to deal with social tensions in their relationships with the social environment is the root of most of the occurrence of cyber-bullying among adolescents.

In other studies, cyber-bullying occurs because of the popularity aspect (Gradinger et al., 2012). Cyber-bullying longitudinally perceives the popularity of girls. The popularity of these girls encourages boys to try to make contact with popular girls via cellphones or on the internet (Gradinger et al., 2012). Girls think this action is cyber-bullying. This condition occurs because of the romantic relationships that develop between girls and boys, especially in early adolescence, where interest in relationships increases. Students who do not get what is expected in their romantic relationship with female students will encourage disappointment, for example, a breakup. Feelings of frustration will encourage negative behaviors of envy, intolerance, and verbal beatings. One of the causes of cyber-bullying in the school environment is a breakup between teenagers. Students consider a rupture causing feelings of rejection and anger that lead to acts of revenge using cyber-bullying.

Hopes that students' romantic relationships that are not achieved can affect the appearance of jealousy. This jealousy arises when someone has an interest in another person, but that person ignores it or rejects it. In other cases, cyber-bullying occurs because suspicion occurs when someone is looking for friendship or a romantic relationship, but that other person prefers an affiliation with another person. In some cases, cyber-bullying is used as a way to vent frustration because of that jealousy. Cyber-bullying of school adolescents often grows out of intolerance (Hoff & Mitchell, 2009). Prejudice often arises because someone feels better than others, has a narrow mind, there is a feeling that other people think misery or different opinions (for example, fear, sad, isolated, helpless) that they feel themselves. Typical forms of intolerance include sexual orientation (homosexuality), physical disability, religion, and gender.

4.3. Impact of Cyber-bullying on School Adolescents

The teachers are concerned about the impact of cyber-bullying; they assume that bullying and violence online are a severe problem at school. The context of cyber-bullying intimidation can have a broad impact because of the ease of access to information through internet technology—anyone, whenever and wherever data can be accessed openly. Cyber-bullying can have a more severe impact on mental health problems and academic problems than traditional bullying.

The cyberbullying impact on psychology

Cyber-bullying can hurt the psychological state of the victim. Victims will experience high levels of anger, helplessness, sadness, and fear. Studies conducted by Hoff and Mitchel (2009) report the most significant psychological effects of cyber-bullying in a row, namely anger, helplessness, grief, and anxiety. Students who experience cyber-victimization can encourage depressive symptoms (Ramsey et al., 2016). Besides, traditional-bullying has a stronger relationship with depressive symptoms compared to cyber-bullying (Sjursø et al., 2016). This condition is not following other studies which found that victims of cyber-bullying have more depression than victims of traditional-bullying (Campbell, Spears, Slee, Butler, & Kift, 2012). Also, cyber-bullying / victimization has a significantly more robust relationship with anxiety symptoms than between traditional-bullying / victimization and anxiety symptoms (Sjursø et al., 2016).

Adverse effects will increase when students do not know who is intimidating and give a sense of helplessness and fear among victims. This is very reasonable because cyber-bullying cases are often carried out by perpetrators anonymously. Anonymity causes increased feelings of disorder and anxiety compared to when the victim knows who is committing cyber-bullying. That is, the victim does not know the identity of the perpetrators of cyber-bullying. The anonymity aspect can make the victim feel less secure so that the power imbalance can be more energetic in cyber victimization than traditional victimization (Menisini, Nocentini, Palladino, B., Scheithauer, Schultze-Krumbholz, & Frisén, 2013). Besides, cyber-bullying enables bullying to be accessed by the public widely through the internet.

Technology for perpetrators is the perfect medium to increase fear and powerlessness for victims. This condition causes the victim to feel insecure due to cyber-bullying. Overall, victims of cyber-bullying feel more vulnerable and anxious than traditional-bullying. And fatal, cyber-bullying can cause dangerous and unproductive reactive behavior.

Reactive Behavior

Victims of cyber-bullying may lead to reactive behavior such as suicide attempts. This condition occurs due to ongoing depression and ultimately has an impact on the emergence of ideas and suicide attempts. Several studies have discussed the effects of cyber-bullying more severe than traditional-bullying and can even lead to suicide attempts. Cyber-bullying has a higher risk of experiencing depression, drug use, self-injury, suicide ideas, and suicide attempts compared to traditional-bullying (Bauman et al., 2013; Bonanno & Hymel, 2013; Hinduja & Patchin, 2010; Kowalski et al., 2008; Litwiller & Brausch, 2013; Peng et al., 2019). Bonanno and Hymel (2013) state that involvement in cyber-bullying, whether as a victim or bully, uniquely contributes to the prediction of depressive symptoms and suicidal ideas, over and above the contribution of the participation in traditional forms of intimidation (physical, verbal, relational). The structure of the impact of gradual bullying on traditional-bullying will make victims of depression. Then the victims try to commit suicide while cyber-bullying can directly impact suicide attempts (Bauman et al., 2013). Young people who experience traditional-bullying or cyber-bullying, both as perpetrators or victims, have higher suicidal thoughts and are more likely to attempt suicide than those who do not experience forms of peer aggression (Hinduja & Patchin, 2010).

Difficulties in Social and Academic Development

Another problem due to cyber-bullying is social difficulties in making friends (Peled, 2019; Wachs, 2012). Cyber-bullying allows victims and bullies to experience the challenges in social situations and make friends, which can then cause negative emotional consequences they experience (Wachs, 2012). Also, cyber-bullying performers show less of an evil conscience, hence releasing morals is higher than traditional bullies (Wachs, 2012). These social difficulties felt by victims begin with feelings of low self-esteem, helplessness, social anxiety, alienation, and finally, they isolate themselves from social interactions (Wong-Lo et al., 2011). Besides, cyber-bullying can also hamper student academic development (Peled, 2019; Wong-Lo et al., 2011). Feelings of pressure and shame encourage students not to focus on learning activities in school. Victims will find it challenging to develop their academic, social, and emotional capacities (Peled, 2019).

4.4. Protective Factors of Cyberbullying Actions in School Adolescents

The Role of the School Environment

Cyber-bullying must receive serious attention from school stakeholders. Teachers, parents, and peers must play a role in reducing cyber-bullying. Various protective programs can be carried out for the prevention of cyber-bullying, and education is a crucial component for the prevention and intervention in cyber-bullying. Educators need to develop creative strategies to engage young people about the use of accessible technology in a meaningful way. In this context, educators can create lessons that teach students to post their opinions appropriately on internet media. A conducive school environment has a vital role in reducing the occurrence of cyber-bullying. Previous studies revealed that a positive school climate (Fedewa & Ahn, 2011; Kowalski et al., 2014; Wachs, 2012), and school safety (Kowalski et al., 2014) are believed to be able to protect children from victimization and suppression of cyber-bullying.

The Role of the Family

Cyberbully victims have often had the lowest level of family support (Hellfeldt et al., 2019). Various preventive actions and interventions that can be done by the family. Parents can help interventions to avoid cyber-bullying by providing (a) emotional and practical support to students, (b) knowledge of ICT safety, (c) a structured environment characterized by warm involvement and control of behavior combined with discussion and participation in children's online lives that promote critical thinking, respect, and finally autonomy. Some types of social support can protect against cyber-bullying. This social support is like the support of family, friends, and teachers. Specifically, perceived social support from the family and the teacher reduces the likelihood of symptoms of depression and anxiety, and a higher level of social support from the family increases the probability of a higher level of subjective well-being among children being victims of cyberbullying (i.e., cyber victims) and become perpetrators and victims of cyberbullying (i.e., victims of cyberbully) (Hellfeldt et al., 2019). Some factors related to the family environment are

high socioeconomic status (Tippett & Wolke, 2014), positive family environment (Cook et al., 2010; S. Guo, 2016), parent interaction (Chen et al., 2017), mediation in the use of technology, parental supervision and monitoring (Kowalski et al., 2014), authoritative parenting, parental involvement, support, communication and warmth (Lereya et al., 2013) are all related to lower victimization.

The Role of Peers

Cyber-bullying often occurs with victims who have social skills and peer relations problems. Information and communication technology as a medium of communication between users, but students who have offline relations problems will tend to become victims of cyber-bullying (Seepersad, 2004). Therefore, the role of positive interaction and peer support is vital to reduce the case of cyber-bullying (Hellfeldt et al., 2019). Previous studies revealed that positive peer influence (S. Guo, 2016) and peer support (Kowalski et al., 2014) are associated with less cyber-victimization. Besides, the selection of a positive community is significant in reducing the occurrence of cyber-bullying. Cook, Williams, Guerra, Kim, and Sadek (2010) state that a positive community is believed to be able to protect children from cyber-bullying.

Individual role

Cyber-bullying protective measures not only rely on situational factors but also on personal factors. Students are considered to have a vital role in protecting themselves from engaging in cyber-bullying. Among individual factors, prosociality is thought to reduce cyber-victimization and cyber-bullying actions, such as reducing the frequency of technology use (Kowalski et al., 2014). Besides, social competence, intelligence, and problem-solving (Cook et al., 2010; Kowalski et al., 2014) can protect against victimization, as well as self-relating cognition (Cook et al., 2010; S. Guo, 2016).

Catanzaro (2011) proposes several protective programs to reduce cyber-bullying actions, namely no-blame intervention, methods of shared concern, peer mentors and empathy training, collaborative mentorship, and systemic thinking. Besides, the ViSC Social Competence Program is also proposed as a preventive cyber-bullying program (Gradinger et al., 2015). ViSC is a primary prevention program, including secondary prevention elements (a) to reduce aggressive behavior and intimidation and (b) to encourage social and intercultural competence in schools. The results of this study provide further evidence that adolescent peer aggression must be taken seriously both at school and at home, considering that cyber-bullying hurts students. Also, the prevention and intervention component of cyber-bullying is essential in the response program to cyber-victimization and cyber-bullying in the school environment.

5. Conclusion

Cyber-bullying is a new form of bullying that needs to be watched out by school stakeholders. Advances in technology and information have encouraged broad access to information and opened up opportunities for bullying through these technologies. Cyber-bullying is caused by factors in the school environment, family, teachers, friendship, and personal factors. The effects of cyber-bullying include psychological effects (depression, anxiety, loneliness, anger, social isolation), reactive behavior (suicide, violence), academic problems, and social difficulties. Meanwhile, protective measures to reduce the occurrence of cyber-bullying include the involvement of school, family, peers, and individuals. The problem of cyber-bullying is serious both at school, and outside of school, therefore it needs serious attention by all stakeholders to deal with cyber-bullying issues.

Declaration of Competing Interest

All authors declare no conflicts of interest concerning this article.

Funding sources

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Acknowledgements

This paper is part of a thesis project, so we would like to thank the Yogyakarta State University Postgraduate Program for approving the selection of this thesis topic.

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