CYBERBULLYING: DEFINITION AND MEASUREMENT IN ADOLESCENT – LITERATURE REVIEW

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Abstract

Purpose of the study: This study is a literature review on cyberbullying from 2004-2017. Topics covered in the review have been categorized starting with the definition of cyberbullying; factors causing cyberbullying; and measurement tools of cyberbullying in adolescents. The purpose of this literature review is to provide a comprehensive analysis of the current research on cyberbullying as it relates to cyberbullying intervention/prevention programs further.

Methodology: This study applied the method of literature review that related to cyberbullying and other related journals from EBSCO Database.

Main Findings: This study found that there is a need to determine a more consistent definition of cyberbullying criteria in order to establish more accurate measurement methods. Furthermore, factors causing cyberbullying are not only the personal factors and situational factors, but also the social-ecological (factors) theory.

Applications of this study: The cyberbullying handling program for teenagers must be designed by the schools holistically and in cooperation between all elements and levels of communities that are related to the lives of teenagers, including those in regards with home, school, peers, and any other elements related to teenagers' lives such as those that are easily accessed online.

Novelty/Originality of this study: This study discussed cyberbullying in a more integrated and complete explanation especially about the type of cyberbullying measurements that can be used.

Keywords: Cyberbullying, Adolescent, Definition, Measurement Tools, Literature Review, Cyberbullying Causes.

INTRODUCTION

Bullying is a major public health problem both domestically and internationally (Lee, Hunter, & Patton, 2016). Many studies have adopted the definition of bullying established by Daniel Olweus, who has been conducting studies in this subject since the 1990s and attracted the interest of several other researchers to conduct studies on the same subject, which is bullying. According to Olweus (in Measuring Bullying Victimization, Perpetration, and Bystander Experiences: A Compendium of Assessment Tools, 2011), a victim of bullying is someone who experiences any negative behaviors by one or more people repeatedly, excluding the case of fighting between two teenagers who have a relatively similar physical strength and psychological domination.

Papatraianou et al. (2014) stated that most of the study literature that have existed since around the last forty years ago investigated the nature and extent of the traditional bullying which talked about the face-to-face bullying in schools (sometimes also referred to as offline bullying). Recent researches regarding the bullying have identified that teenagers nowadays predominantly face intimidation through the internet and digital technology (Papatraianou et al., 2014). Such intimidation is now better known as cyberbullying which often occurs among teenagers. According to a research with 613 respondents, 19% of the respondents were reported being the victims of cyberbullying in higher educational institutions, and 35% of the respondents were reported experiencing the cyberbullying at the time they attended high schools (Zalaquett & Chatters, 2014). Other research stated that 58.4% of 430 students who were 18-35 years old bullied others (Kokkinos et al., 2014). Another research related to cyberbullying was also conducted in Indonesia by Febrianti & Hartana (2014), and it was found that 77% of 133 students of University of Indonesia who were 20-25 years old bullied other students.

Thus, we can say that cyberbullying is now a universal problem, and among many reasons, this is one of the most prominent reasons that is damaging public health. Considering these points, the researches aimed to provide a comprehensive analysis of the current research on cyberbullying as it relates to cyberbullying intervention/prevention programs further.

METHODOLOGY

This paper used a literature review method to gather relevant data for the paper. In this study, the literature review was conducted through various articles and journals from the internet. The following keywords were searched: cyberbullying, cyberbullying definition, cyberbullying on adolescent, cyberbullying measurement tools. The searching activity included data published either as a journal article, e-book, or chapter/s. The journal was originated from EBSCO Database. There is no limitation to the date of publication materials, with a total of 60 published materials including journal articles, e-books, and chapters.

ANALYSIS

Definition of Cyberbullying

Recent research regarding bullying has identified that teenagers nowadays predominantly face intimidation through the internet and digital technology (Papatraianou et.al, 2014). This behavior is now better known as cyberbullying. Cyberbullying or online bullying is an intentional and recurring violence (rough and threatening behavior) done through computers, cell phones, and any other devices that can be connected to the internet (Rosen et al., 2008; Hinduja & Patchin, 2009). The definition is used because of its clarity and conciseness. It includes several important elements as follows: intentional (the behavior is not incidental, it must be intentional); recurring (the behavior is not merely one event of an occurrence, but something that happens repeatedly); endanger (the target of bullies must feel the danger resulted by such behavior); computers, cell phones, and any other electronic devices. The use of those devices makes cyberbullying differs from traditional bullying. Smith et al. (in Topcu & Erdur-Baker, 2018) defined cyberbullying as an aggressive and intentional act committed by groups or individuals, by using electronic devices, recurring and overtime against any victims who are not capable of defending themselves. These various conceptualizations in regards to cyberbullying are further combined with the fact that cyberbullying may take in various forms and may occur in various places, so that cyberbullying becomes more complicated.

Willard (2007) made a taxonomy of the types of cyberbullying namely flaming (online contention), harassing (repetitive actions, sending offensive messages to the target/victim), outing and tricking (sharing a person's personal information without his consent and deceiving the victims to disclose their personal information and then share such information with others without the consent of the disclosing parties), exclusion (exclusion of someone from an online group), impersonation (imitating others' identities and uploading any material to harm the reputations of whom the identities were imitated), cyber-stalking (using any electronic devices to stalk others by sending repetitive threatening messages), and sexting (spreading photos of naked of anyone without the consent of the relevant individual). Cyberbullying can occur through a variety of media, such as chat rooms, social networking sites, e-mail, digital images, instant messaging, text messages, webpages, and online games.

Cyberbullying Characteristics

According to Langos (2012), there are 4 main aspects of cyberbullying behavior as follows:

1. Repetition. It is a path of behavior that is contrary to one incident.

2. Power Imbalance. It is a condition in which the bullies are having more power than the target.

3. Intention to harm. Any bullying behavior must occur by the intention of the bully and it is not an accident.

4. Aggression. It is a behavior that involves crime on the part of the aggressors (bullies).

The four core elements of bullying are summarized in several descriptive definitions of cyberbullying. The unique element given to the definition of cyberbullying is related to the use of information and communication technology. Cyberbullying is a repetitive and aggressive online behavior facilitated by the use of information and communication technology. Cyberbullying can also be defined as bullying transferred to any technology platform since it may occur through various technological media, including computers, cell phones (smartphones), and any other ICTs.

In cyberbullying behavior, there are 4 roles created, namely the bully (perpetrator), the victim, the bully as well as the victim, and the individuals who are not involved in any of the roles or commonly referred to as 'not involved' (Kowalski & Limber, 2013). This division of roles is almost the same as the roles created in traditional bullying, the only difference is in the media used to do the bullying in which the cyberbullying is done through electronic devices.

1. Perpetrators

Perpetrators are any individuals who commit an act of bullying. According to Elkind (in Sheras, 2002), there are several criteria to define any individual as the bully, namely:

a. An individual who chooses only those who are considered less in power in some respects.

b. An individual who hesitates to accept other people's ideas.

c. An individual who hesitates to negotiate with others when playing.

d. An individual who frequently oppresses or harasses others physically or mentally in order to stand out or to become popular higher than the average.

Such characteristics of perpetrators are also supported by Olweus (in Kowalski et al., 2008). General characteristics of the oppressive individuals are as follows:

a. They have a dominant personality and are like to express themselves using force.

b. They are temperamental, impulsive, and are easily frustrated.

c. They have a tendency towards violence than the other children.

d. They look tough and show a little empathy or compassion on those they bullied.

e. They deal with adults aggressively.

f. They frequently deal with adults in an aggressive way.

g. They are good at talking to themselves from difficult situations.

h. They are involved in a proactive aggression (i.e., deliberate aggression for achieving goals) and reactive aggression (i.e., the defensive reaction caused by a provocation) (Rosen et al., 2008; in Kowalski et al., 2008).

2. Victims

Victims are any individuals who are targeted by bullying. According to Sheras (2002), victims can be defined as those who are continuously exposed to aggression from others over time. Victims of bullying tend to have the following characteristics:

a. Shy, full of fear and anxiety.

b. Low self-esteem.

c. Socially isolated.

d. Physically weak.

e. Has emotional nature (if the victim is a male).

According to Kowalski & Limber (2013), there is a strong correlation between individuals who have been victims of traditional bullying with anxiety levels. Whereas individuals who are victims of cyberbullying have a correlation with depression levels.

3. The Perpetrators as well as The Victims

Perpetrators as well as the victims are those who are victims of bullying behaviors by peers or others elders, and who still have the pain and frustration resulting in others bullying behaviors and try to get out of their situation by bullying others. According to Kowalski & Limber (2013), individuals who are perpetrators and also victims have a high level of anxiety and depression compared to the three other roles.

4. Not Involved

Not involved is an individual who is not involved in any bullying. Such individuals act as observers in such a situation. They play a role as the witnesses in the occurrence of these actions and do not participate directly in the act of cyberbullying (Topcu & Erdu-Erdur-Baker, 2018).

Causes of Cyberbullying

In order to regulate and understand the cyberbullying phenomena, the theory of social information processing (Crick & Dodge, 1994) or social cognitive theory (Bandura, 1986) has been utilized. In addition, the General Aggression Model (GAM) theory can assist in understanding the personal and situational factors that affect cyberbullying. There are 2 factors causing cyberbullying (Anderson & Bushman, in (Kowalski et al., 2014)):

1. Personal factors

Personal factors are individual characteristics that are consistently influencing the situation. Personal factors comprise of attitudes, values, behavior schemes, personality traits, gender, motives, beliefs, long-term goals, and any other unchanging characteristics. In cyberbullying, the most significant personal factors are personality, gender, socioeconomic status, and the use of technology, age, values and perceptions, psychological states, motives, and other defective behaviors.

2. Situational Factors

Situational factors are environmental characteristics such as signs of aggressions, external sanctions, provocations, drugs, sources of frustration, and incentives. Besides, social situation restriction to act aggressively is also included as one of the situational factors. Situational factors that influence cyberbullying are perceived provocation and support, school situation, perceived anonymity, parental involvement.

Regarding the factors underlying bullying and cyberbullying, several kinds of research have also recognized that it is important to consider the social-ecological framework. In order to find out a more comprehensive understanding of a social phenomenon, an investigation of interrelated contextual factors that encourages or inhibits bullying that occurs to the victims (victimization) is required. Both related theories and researches indicate that bullying is an ecological phenomenon so that the influencing factors need to be understood across individuals, families, peers, schools, and

environmental contexts (Espelage, 2014). The theory of social-ecology has been very useful in conceptualizing the traditional forms (verbal, relational, and face-to-face) of bullying (Espelage, 2014). In this approach, health risks are stated to be not a direct or indirect result of individual behavior. Instead, the bullying resulted from a complex interaction between an individual and the context they live in (Espelage et al., 2012).

The social-ecological theory suggested by Bronfenbrenner illustrates a system of potential direct and indirect impacts on human behavior. Initially, at the microsystem level, children interact directly with their environment that consists of home and family, school, and peer groups that affect and enhance certain attitudes and behaviors. This environment is also influencing others, at a mesosystem level, which ultimately affects the children's development. For example, the interaction of home and family with the school and classroom teachers may have a simultaneous effect on the children. Further systems also affect children. Such ecosystem includes contexts in which the children do not experience a direct contact but still affected by the ecosystem, for instance, the parents' workplaces, institutional infrastructure and the school employees. At the macrosystem level, it consisted of broader social, political, cultural and economic ideologies that shape the trends and social institutions that ultimately affect the children's environment. Previous research has also uncovered that the risk and protective factors at each level may affect the probability of being involved in bullying (Espelage, 2014).

In understanding the development of teenagers through social-ecological theory, the use of technology cannot be ignored. Access to technology in their microsystems (home, peers, school) shows that there is an increasing mutual interaction between teenagers, cyberspace environments, and other aspects of their daily life (Cross et al., 2015). The use of cyberspace by teenagers can be a complex thing and is described in a framework called 'The Five Cs' (Valcke et al., 2011). There are five ways on which teenagers interact in an online environment: (1) online context, on which teenagers spend their time, for example through Instagram, chatting in chat rooms; (2) online contact (social relationship) that they have; (3) the extent to which they hold down their privacy; (4) the behavior that they perform, including their skills and self-regulation; and (5) the content that they publish, use and access.

In a case where technology is used to hurt people, then it can cause and reduce the functioning of schooling for some children. More than half of the students, who are classified as the research's samples, have experienced cyberbullying and a quarter of them have done online bullying on others. Then, one-third of them had experienced bullying both in schools and cyberspace (Beran & Li, 2015). Bullying in schools and cyberbullying has a prevalence rate of 27.4% and both of these bullying increases the feeling of sadness and suicidal ideation in teenagers (Messias et al., 2014). Students who have been bullying others at school will consider bullying as a way to adapt to peer groups so that they will start bullying online. As a result, they will target their victims by threatening them through online messages. In other words, with the availability of technology that is easy to use, bullying can involve many students at school, at home, anytime and anywhere as long as the technology can be accessed by the students (Beran & Li, 2015).

Measurement Instrument of Cyberbullying

The varied notions of cyberbullying have led some researchers to conduct studies in order to define and measure cyberbullying in various ways. The conceptualization and establishment of cyberbullying measurement instruments are largely based on traditional bullying theory. Research on traditional bullying inspired cyberbullying researchers. Instead of using phrases related to bullying in a physical environment (offline), the cyberbullying researchers change the wording of items in the traditional bullying scale or adding online bullying behavior. Based on those of offline bullying, new instruments for measurement of cyberbullying are generated (Cross et al., 2015). In the early 2000s, several researchers tried to comprehend the definition of cyberbullying and then measured several related aspects. Firstly, the prevalence rate of victimization and cyberbullying (Li, 2005; Smith et al., 2008). Secondly, the correlation of cyberbullying and basic demographic variables such as the age, gender, and socioeconomic status (Finn, 2004; Kowalski & Limber, 2007). Lastly, the similarities and differences between traditional bullying and cyberbullying (Strom & Strom, 2004; Greene, 2006; Erdur-Baker & Kav,sut, 2007).

The definition of bullying itself emphasizes 3 basic elements, namely repetition, intention to harm, and power imbalance. These three elements can also apply to cyberbullying. Although cyberbullying may only be done once in the cyberspace, yet the online content may be seen, stored, forwarded, or reposted and may harm the victim repeatedly because such bullying continues to appear in cyberspace and anyone sees it (bystander) can forward such content so that the act of cyberbullying continues over time (Langos, 2012). In traditional bullying, what may result in power imbalance is the difference in terms of physical appearance (age, height, weight, and sex), socioeconomic status of bullies and victims, and level of popularity (Langos, 2012). Since such physical comparison may not possibly occur in cyberspace, then the superiority of cyberbullying perpetrators comes from various things, for instance, the ability in manipulating the anonymity level and the expertness in determining the number of observers and who has the right to be the observers (Langos, 2012). Some researchers argue that power imbalances may be caused by the high-level skills in using technology that enables anyone to have such skill to do some cyberbullying actions. Despite the researcher's argumentation, some acts of cyberbullying may be done without the need for the so-called high skill in technology. For example, embarrass someone on Facebook by giving inappropriate comments. It is a very easy thing to do so that the cyberbullying perpetrators do not need to be technologically proficient to do their act of cyberbullying (Cassidy et al., 2013). The third element is the intention to harm the victim. This element is difficult to be measured in cyberbullying

because it happens indirectly (Menesini & Nocentini, 2009). But there is a way to measure this element, which is the comprehension of whether the victims consider the act as something threatening and offensive or not. It will provide a more appropriate assessment in deciding whether the action has the intention to hurt or not.

Two additional indicators also needed to be considered in measuring cyberbullying, namely the anonymity and publicity. Both of these are also unique characteristics of cyberbullying (Nocentini et al., 2010). Anonymity is the condition of the victim who does not know the identity of the offender so that it increases the victim's feeling of vulnerability (Slonje & Smith, 2008; Dooley et al., 2009). Slonje and Smith (in Thomas, Connor, & Scott, 2015) stated that publicity was the condition in which an exchange of personal information involves many people, and it became the most severe type of cyberbullying.

The establishment of a precise prediction related to the level of cyberbullying is more difficult than those of the traditional bullying. Cyberbullying operates in more complex ways and there are inconsistencies in the measurement techniques (Riebel et al., 2009). In measuring the prevalence of cyberbullying and victimization, it is important to have instruments that produce reliable, valid and practical scores. The application of the three traditional bullying criteria on cyberbullying is difficult since cyberspace has its own characteristics, so new questionnaires are needed to be developed by the cyberbullying researchers (Topcu & Erdur-Baker, 2010; Palladino et al., 2015). Several researchers analyzed and compared the questionnaires in systematic studies by discussing the strengths and weaknesses of the questionnaires (Berne et al., 2013; Vivolo-Kantor et al., 2014; Kowalski et al., 2014; Thomas et al., 2015). According to this review study, each of these scales has several problems as follows: (1) being too long and time-consuming (Huang & Chou, 2010; Gimenez et al., 2015); (2) having items that include programs, technology, and application-specific requirements that are only relevant in a short period and may change rapidly (Bastiaensens et al., 2014; Palladino et al., 2015); or (3) by asking one same question to measure cyberbullying and cyber victimization at once (Pabian & Vandebosch, 2015). In further research, cyberbullying measurement instruments also need to use alternative methodologies such as peer assessment and teacher's report (Topcu & Erdu-Baker, 2018).

The following are the explanation on cyberbullying measurement instruments and information on the existence or non-existence which based on the definition of criteria in cyberbullying:

Table 1: Cyberbullying Measurement Instruments and Information on the Existence or Non-Existence Based on the Definition of Criteria in Cyberbullying

Measure	Type of Bullying	Type(s) of Scale	Scale Composition	Intention to harm	Repetition	Power Imbalance	Anonymity	Publicity
RCBI (Topcu & Erdu-Baker, 2010)	CB	V, P	M (beh.)	v	V	V	x	x
The online-questionnaire (Riebel, Jager, & Fischer, 2009).	TB, CB	V, P, B	G, M (beh.)	V (op.)	V (op.)	V	x	x
Huang & Chou, 2010	CB	V,P, B	M (def.)	V (op.)	V	V (op.)	v (op.)	x
Behavioral Intentions to Help the Victim or Reinforce the Bully Questionnaire (Bastiaensens et al., 2014)	CB	B	M (beh.)	v	V	X	x	v
Florence Cyber Bullying-Cyber Victimization Scales (Palladino et al., 2015)	CB	V, P	G (beh.)	V (op.)	V (op.)	V	v	v
Cyberbullying	TB, CB	V, P, B	G, M (beh.)	V (op.)	V (op.)	V (op.)	V (op.)	x

Questionnaire (25 close-ended and 2 qualitative questions) (Gimenez et al., 2015)								
Self-Reported Bullying & Cyberbullying Behavior (Pabian, & Vandebosch, 2015)	TB, CB	V, P	M (beh.)	V (op.)	V (op.)	V	x	x
RCBI II (Topcu & Erdu-Baker, 2018)	CB	V, P	M (beh.)	V	v	V	x	x

Note: *TB (Traditional Bullying), CB (Cyberbullying), V (Victimization Scale), P (Perpetrator Scale), B (Bystander Scale), M (Multiple-Item Scale), G (Global Single Item), (def.) definition-based scale, (beh.) behavior-based scale, (op.) definition criteria operationalized, v (definitional criteria present), x (definitional criteria absent)*

Impact of Cyberbullying

Both traditional bullying and cyberbullying have a negative impact on the individuals involved. Where an act of cyberbullying occurs, several roles are accordingly involved. According to the findings of Kowalski and Limber's (2013) research, their respondents were categorized into 4 different roles as follows: victims, perpetrators, perpetrators, and also victims, and those who were not involved in cyberbullying. This categorization is similar to traditional bullying. Individuals who are victims usually have problems such as social anxiety (Juvonen & Gross, 2008), low self-esteem (Chang et al., 2013), depressive symptoms (Bonanno & Hymel, 2013), suicidal ideation (Van Geel et al., 2014), and anxiety (Rose & Tynes, 2015). Other research conducted by Beran & Li (in Alvarez et al., 2017) stated that the affected individuals experience an increase in their concentration problems, a decrease in performance, and often skip their school day.

Those in the group of perpetrators and also victims (and especially in the cyberbullying) had the most negative scores in terms of psychological health, physical health, and academic performance. These effects also cause the cyberbullying victims to exhibit characteristics of those who experience violence at school and tend to have a low self-esteem, anxiety disorders, socially isolated, decreased academic achievement and school attendance, depression, and suicidal tendencies (Donegan, 2012). Meanwhile, the characteristic of cyberbullying perpetrators is that they tend to insult and embarrass the victims when the victims upload photos or any status on the social media platform (Wiryada et al., 2017), have a low level of empathy (Doane et al., 2014), are verbally aggressive (Roberto et al., 2014), and tend to have a high level of psychotic (Ozden & Icellioglu, 2014).

DISCUSSION

The definition of the criteria of cyberbullying, namely intentions to harm, repetition, and imbalance of power has become the basis in the literature on traditional bullying. This criterion establishment is appropriate to cyberbullying (Nocentini et al., 2010). Nevertheless, anonymity and publicity may also be needed as additional criteria. The use of self-report questionnaires is agreed to be the most superior methodology in examining the prevalence of bullying behavior and its relationship with other variables. The integration of the research on traditional bullying and cyberbullying is important and able to sharpen the understanding of the context of bullying behavior through the use of the developed technology (Thomas et al., 2015). In addition, according to Topcu and Erdu-Baker (2018), alternative methods such as peer assessment and teacher assessment are also needed to measure cyberbullying on teenagers/students.

Furthermore, based on data from the Australian Bureau of Statistics in 2011 (in Cross et al., 2015), the proportion of young people around the world who have the access to internet at home, school and in the community, and during their mobility as well, both alone and with friends or others, has increased exponentially. It can be considered that their engagement to the online environment, especially for communication to each other, may intensely correlate with other aspects of the teenagers' (and other users') social-ecology (peers, home, school) and may contribute both positive and negative impacts on their development over time (Jackson et al., 2006; Johnson, 2010, in Cross et al., 2015).

Many negative social and emotional effects experienced by the victims of bullying have been noted. The increasing duration of technology access to cyberspace has a new impact on teenagers that causes them to be vulnerable to becoming the victims both inside and outside the school environment (Raskauskas & Stoltz, 2007).

CONCLUSION

In establishing cyberbullying measurement instruments, a consistent definition of cyberbullying is needed. Such definition will later become the main implication in constructing the measurement instrument and determining the preventive measures that need to be done when cyberbullying occurs. Integration of the definition and understanding between the traditional bullying and the cyberbullying needs to be done so that it is expected to form a more accurate measurement. Assessment of peers, teachers, and parents is needed to measure the rate of occurrence of cyberbullying in teenagers.

Furthermore, cyberbullying behavior also needs to be assessed from various environments affecting the lives of adolescents, such as home environment, school, peers, and any other environments related to their daily lives and any other environments that can be accessed online. In order to deal with the cyberbullying behavior comprehensively, the social-ecological theory needs to target the cognitive, ecological and psychosocial risks and protective factors that can be controlled at an individual level, family level, peers, online and community, by recognizing the invisible online social context and/or offline context of the adolescents' (teenagers') lives and the way they engage with others in an online context.

LIMITATION AND RECOMMENDATION

There is still less study that discusses the treatment program or psychological intervention to deal with cyberbullying cases. This research can be discussed further.

CO-AUTHORS CONTRIBUTION

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T.T.P.; analysed data and co-wrote the paper, contributed to conception, and/or analysis and interpretation of literature data sources.

M.S.A.; participated in draft the article or revised it for content, and submitted any revised version.

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