Exploring the Influence of Theoretical Factors on Students' Cyberbullying Behavior: A Bandura-Inspired Study

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Abstract

Based on Bandura's behaviour theory, this study aims to find a model of theoretical factors influencing students' cyberbullying behaviour. It is essential to understand the factors that influence cyberbullying so that effective programs and interventions can be developed to prevent and overcome its effects. The researcher places Bandura's social cognitive theory model from three aspects of environmental interaction theory (peer influence), personal cognition (self-esteem and empathy) and behaviour (cyberbullying) to determine the factors of cyberbullying. This method uses a quantitative approach with cluster sampling techniques. First, determine the cluster based on the area of the SMA obtained; 2 schools in the East Surabaya area, 1 in the West Surabaya area, 1 in the South Surabaya area, 1 in the North Surabaya area, and 1 in the Central Surabaya area. The sample for this study was 971 students, 365 (37.8%) boys and 606 (62.2%) girls aged between 15 to 21 years in SMA in Surabaya, Indonesia. Data analysis uses a intructural transaction model (SEM). We found a strong relationship between peer influence and empathy in cyberbullying tendencies. Meanwhile, empathy is a mediating variable between self-esteem and cyberbullying, meaning that if students have positive self-esteem and positive empathy, they tend to reduce cyberbullying. However, we found no relationship between self-esteem and cyberbullying.

Keywords: *Cyberbullying, Bandura behaviour theory, peer influence, self-esteem, empathy.*

Introduction

Advances in information technology, electronic communication, and social media have brought changes in people's lives. The phenomenon of cyberbullying in Indonesia appears along with the widespread use of social media. Meanwhile, the number of cyberbullying cases increases yearly; in 2016, there were 56 cases; in 2017, it rose to 73 cases; and in 2018, it jumped to 117 (Mardina, 2019). Whereas in 2019, a survey conducted by the Association of Indonesian Internet Service Providers (APJII) interviewed 5,900 people throughout Indonesia, showing that 49% claimed to have been victims of cyberbullying, with the majority of users being teenagers aged 15-19 years (Yuda, 2019; Chusniyah et al., 2020). Furthermore, Maya (2015) found that 55% of students said that cyberbullying occurred in the school environment, and 45% occurred outside the school environment. In line with this study, Li (2007) stated that victims of cyberbullying were mainly bullied by classmates (31.8%), followed by people outside of school (11.4%).

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The increasing number of cyberbullying victims allows for an increase in cyberbullying behaviour. Berne et al, (2014) stated that the main reasons for cyberbullying adolescents are the desire to get a higher social status towards others, jealousy, seeking attention, the desire to intimidate, revenge, and other conflicts. Studies on cyberbullying through social media have increased in recent years, but this cannot be separated from its impact on perpetrators and victims. Many researchers discuss the psychological impact of cyberbullying, such as maladaptive behaviour, low self-control, physical health problems, and the desire to hurt oneself (Kowalski et al., 2014; Adebayo et al., 2020), anxiety, depression, loneliness, sadness, fear, frustration and low self-esteem (Wolak et al, 2006; Hinduja & Patchin, 2014) suicide (Shim & Shin, 2015).

Cyberbullying

Cyberbullying is aggressive behaviour carried out repeatedly and intentionally through electronic media such as computers, cellphones and other devices, aiming to hurt other people (Irmayanti, 2020). According to Calvete et al., (2010), Cyberbullying includes five aspects; 1) proactive aggressiveness in cyberbullying can occur when someone deliberately uses social media or other online platforms to taunt or ridicule victims, post demeaning or embarrassing comments or pictures, or take other actions to gain profit or to defend themselves on social media actively, 2) Reactive aggressiveness in cyberbullying can occur when someone responds to messages, comments, or harmful actions received on social media with aggressive actions such as replying insultingly, posting replies that mock or humiliate, or even carry out counterattacks in more dangerous forms. Such as doxing or disclosing the victim's personal information; 3) natural aggressiveness in cyberbullying can occur when someone directly attacks the victim using an online platform, such as sending abusive messages or threatening the victim directly, 4) relational aggressiveness in cyberbullying can occur when someone tries to damage the victim's social and emotional relations in ways such as isolating the victim from certain online groups or communities or distancing himself from the victim, and 5) the justification for violence in cyberbullying can occur when someone considers that cyberbullying behaviour is reasonable or even necessary, such as doing cyberbullying as a form of revenge or revenge. In addition, there are four roles involved in cyberbullying: perpetrator, victim, harmful bystander, and helpful bystander (Willard, 2007; Gomba & Zindonda, 2021).

Cyberbullying on Adolescent Students

The focus of this research is on cyberbullying actors. However, research exploring perpetrators is still minimal (Calvete et al., 2010; Mardianto, Hanurawan and Chusniyah, 2019), whereas research on cyberbullying behaviour from the victim's point of view has been carried out in recent years (Ybarra & Mitchell, 2004; Vandebosch et al., 2006; Wolak, Mitchell & Finkelhor, 2006; Raskauskas & Stoltz, 2007; Hinduja & Patchin, 2010, 2014; Shim & Shin, 2015).The more research on cyberbullying victims, the more likely cyberbullying behaviour will increase, so it impacts cyberbullying perpetrators; perpetrators experience depression, anxiety, and higher levels of stress when compared to victims (Campbell et al., 2013; Mardianto et al., 2019).

Further findings show that several cases of cyberbullying are more common in adolescents (Kowalski et al., 2012; Dardiri et al., 2020) because adolescents cannot yet sort out helpful internet activities and communication media (Hanurawan et al., 2020; Hanurawan et al., 2021). Adolescent development cannot be separated from environmental influences; according to Bandura's social theory, adolescents cannot ignore their contact with the environment or online technology. Adolescent access to social media can be seen in individual microsystems such as homes, peer groups, and schools (Johnson, 2010). It is a continuous and increasing mutual interaction between youth and the online environment through social media and personal aspects.

Bandura's Behavioral Theory and Peer Influance

We have considered the application of Bandura's (1978) Social-Cognitive Behavioral Theory as a contextual predictor of cyberbullying behaviour in the interaction of three aspects, environment, personal cognition, and behaviour. We place peer influence on environmental aspects, self-esteem and empathy as Person-Cognitive aspects, while behavioural aspects are contained in cyberbullying behaviour. The choice to place peer influence on environmental aspects and self-esteem and empathy on Personal-Cognitive aspects is based on previous research which shows that these factors influence cyberbullying behaviour (Berne et al, 2014; Brack & Caltabiano, 2014; Brewer & Kerslake, 2015). Placement of peer influence on environmental aspects because peers can influence individual perceptions and actions towards cyberbullying behaviour through social interaction and group influence. Meanwhile, self-esteem and empathy are related to individual internal factors, such as attitudes and emotions so they can be placed on the Personal-Cognitive aspect.

Empathy and Self Esteem

Furthermore, peer influence places adolescents as cyber bullies because adolescents tend to be easily influenced by the social environment, and adolescents have positive normative beliefs about this behaviour (i.e. when adolescents believe that peer influence approves of this behaviour) (Xiao & Wong, 2013). Personal and cognitive factors place self-esteem and empathy as predictors of cyberbullying behaviour. Bandura (1978) states that self-esteem is part of self-efficacy, namely having confidence in exercising control and taking the necessary actions in certain situations. So it can be assumed that someone with high self-esteem tends to have a better self-concept, understands others, and can form and maintain good influence (Eisenberg, 2002).

Meanwhile, according to Jolliffe & Farrington (2006), empathy involves interpersonal assessment and social cognition. Because empathy has two components, namely cognitive and affective (Batson, 2009), the cognitive component is a person's ability to place oneself in another person's situation to know exactly the person's thoughts or feelings, while the affective component places one's feelings. Experience emotional responses that occur to oneself (Hoffman, 2001). If students have high affective empathy, they will try to feel and put themselves in other people's shoes; when students have cognitive empathy, they can position themselves in the perspective of others. Meanwhile, empathetic students understand the circumstances or thoughts of others without actually experiencing the feelings of others. So that when someone wants to do something, he can understand that this behaviour can hurt or harm other people or not.

This is in line with the opinion of Xiao & Wong (2013), which is very relevant and more holistic in understanding cyberbullying behaviour, personal factors (self-efficacy and motivation) and demographic factors (age and gender) on cyberbullying in adolescents in Hong Kong. The study shows that personal and environmental factors only explain 41% of cyberbullying. This means that personal and environmental predictors still need to be explored as cyberbullying factors. In addition, studying cyberbullying in adolescents also has important implications in developing a holistic and comprehensive prevention approach, considering the factors of empathy, self-esteem and the influence of peer groups influencing this behaviour in the context of Bandura's Behavior Theory. By studying this topic together, we can create greater awareness about the detrimental effects of cyberbullying on adolescent mental health and develop strategies to deal with this problem effectively. So the purpose of this research is to find a theoretical model of the factors that influence cyberbullying behaviour and can be used to design intervention modules to reduce cyberbullying among adolescents. Based on the explanation above, we intend to answer the research formulation:

1.   Are individual aspects such as empathy and self-esteem or environmental aspects such as peer influence still a variable that can reduce cyberbullying behaviou?

2.   To what extent can the proposed model explain valid and appropriate cyberbullying behaviour?

Method

Participants

The sample of this study was 971 students consisting of five secondary schools in Surabaya, Indonesia. 365 (37.8%) boys and 606 (62.2%) girls between the ages of 15 and 21. The sampling technique used was cluster sampling. First, determine the cluster based on the region of the high school obtained as follows; 2 schools in the East Surabaya area, 1 in the West Surabaya area, 1 in the South Surabaya area, 1 in the North Surabaya area, and 1 in the Central Surabaya area.

Measures

Cyberbullying

The scale used in this study is based on the cyberbullying variable adapted from the CBQ (Cyberbullying Questionnaire) by Calvete et al., (2010) This scale is used to measure perpetrator-focused cyberbullying, which consists of 16 items. It describes 16 forms of CB, such as sending threatening or intimidating messages to someone, impersonating someone (hacking), recording bullying via cellphone etc., in which there are five aspects: proactive aggressiveness, reactive aggressiveness, natural aggressiveness, relational aggressiveness and justification of violence. The level of reliability is acceptable (alpha = 0.78)

Peer Influence

We developed a questionnaire containing a scale validated by previous researchers, addressing peer influence on cyberbullying. Researchers place two aspects of peer group influence; normative and informative (Stephan & Stephan, 1985). (a) normative aspect, namely group influence based on the desire to be accepted by the group; (b) the informative aspect, namely group influence based on the desire and need to obtain valid and accurate information about reality from other parties. Peer influence items use a 5-point Likert scale. In this scale, it is necessary to test the instrument before analyzing the data by testing its validity and reliability (Souza et al., 2017).With the results of this scale reliable (alpha = 0.78)

Self esteem

Rosenberg Self-Esteem Scale (RSE) Rosenberg (1987). This scale consists of 10 items with positive and negative aspects, dividing five positive items (1,2,4,6,7) and five negative items (3,5,8,9 and 10). The level of reliability is acceptable (alpha = 0.72)

Empathy

The measurement of empathy in this study was adapted from the basic empathy scale (Jolliffe & Farrington, 2006). This scale has been widely used to measure the empathy of adolescents in various cultural backgrounds, for example, the research by (Casas et al, 2013) examined Spanish adolescents, and Del Rey et al (2016) examined Grece and United Kingdom teenagers. While the empathy scale is divided into two the first is affective empathy and cognitive empathy, which consists of 20 items. The level of reliability is acceptable (alpha = 0.72)

Data analysis

Data analysis using AMOS 20 in SPSS statistical program, version 18.0. To see the size of the fit of a model, it must be measured using several goodnesses of fit indicators according to Hair et al., (2014) namely, first from the chi-square and df values, second

from the absolute fit index (GFI, RMSEA or SRMR), third from the incremental fit index (CFI or TLI), fourth based on goodness of fit index (GFI, CFI, TLI) and fifth based on the badness of fit index (RMSEA, SRMR), above 0.95 with RMSEA 0.08.

Results

For the sake of clarity, the results of this study will be presented based on two hypotheses or two questions and a sequence of hypotheses.

Hypothesis 1

Direct Effect Hypothesis

In this hypothesis, there are two types of variables, namely exogenous and endogenous variables. Exogenous variables are influenced by one or more endogenous variables, while endogenous variables are not influenced by other variables. In this study, the exogenous variables consist of empathy and cyberbullying, while the endogenous variables consist of self-esteem and peer influence.

Furthermore, this study conducted a p-value test with a significance level of 5% to determine the influence of exogenous and endogenous variables. The results showed a significant peer influence on cyberbullying with a path coefficient of 0.362 and a p-value greater than 0.003. Meanwhile, the peer influence on empathy resulted in a path coefficient of 0.309 with a p-value of 0.005 ($p < 0.05$), indicating a significant influence as well.

The effect of self-esteem on cyberbullying produces a path coefficient of 0.041 with a p-value of 0.647 ($p > 0.05$), which means an insignificant effect between self-esteem and cyberbullying. However, the effect of self-esteem on empathy produces a path coefficient of 0.201 with a p-value of 0.048 ($p < 0.05$), which means there is a significant influence between self-esteem and empathy.

The effect of empathy on cyberbullying produces a path coefficient of -0.163; the analysis shows a relationship between empathy and cyberbullying, with a p-value of 0.044 ($p < 0.05$), which means that there is a significant relationship between empathy and cyberbullying. The results of direct hypothesis testing can be seen in Table 1.

Table 1 The direct effect of exogenous variables on endogenous variables

No	Exogenous	Endogenous	Total effect	p-value
1.	Peer influence	Cyberbullying	-.362	.003
2.	Peer influence	Empathy	.309	.005
3.	Self esteem	Cyberbullying	.041	.647
4.	Self esteem	Empathy	.201	.048
5.	Empathy	Cyberbullying	-.163	.044

Indirect Effect Hypothesis

Indirect hypothesis submission is used to see the relationship between exogenous and endogenous variables through mediating variables. The test criteria look at the value of the t statistic t table of (1.96). There is an influence between exogenous variables and endogenous variables through mediation. From the results of indirect influence in table 2, it can be seen that peer influence on cyberbullying through empathy produces a coefficient of 0.050 with a statistic of -0.998 or the value of t statistic < t table (1.96). This means that there is an insignificant peer influence on cyberbullying through empathy. In comparison, the indirect effect on the self-esteem variable on cyberbullying

through empathy has a coefficient value of -0.033 with a statistical value of -2.164 or a statistical t value > t table (1.96). This means that there is a significant influence between self-esteem and cyberbullying through empathy.

Table 2 Indirect influence

No	Exogenous	Mediation	Endogenous	Total effect	Indirect effect	T Statistic	p
1.	Peer influence	Empathy	cyberbullying	-.362	.050	-0,998	0,31
2.	Self esteem	Empathy	cyberbullying	.041	-.033	-2,164	0,03

Hypothesis 2
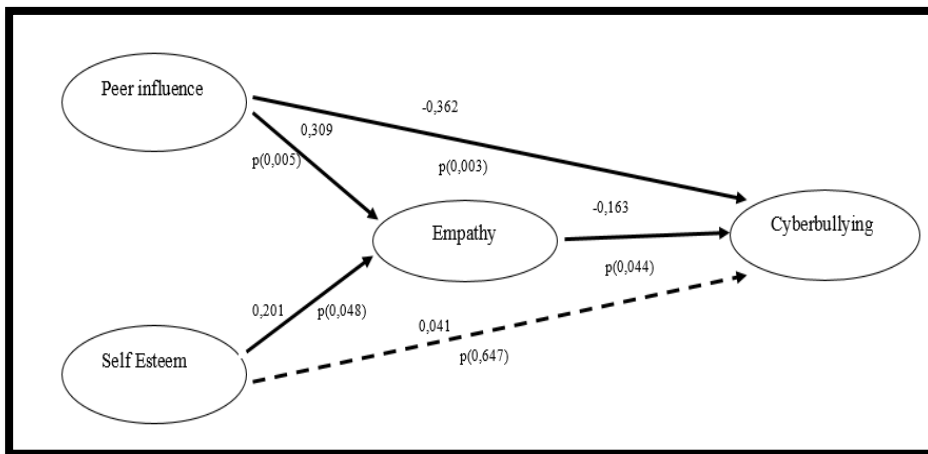
Model Conformity Test Results

Figure 1 Test Results of Cyberbullying Model

The results of the previous model test (see Figure 1) indicate that the model is feasible or acceptable hypothetically simultaneously or as a whole.

Table 3 Model Test Results

Index	Goodness of Fit	Criteria	Description
Chi Square	68,975 (p value = 0.000)	P value > alpha 5%	Sig
CMIN/DF	2.029	≤ 3.00	Good of fit
RMSEA	0,032	≤ 0,08	Good of fit
TLI	0,961	≥ 0,95	Good of fit
CFI	0,976	≥ 0,95	Good of fit
GFI	0,987	≥ 0,90	Good of fit
AGFI	0,975	≥ 0,90	Good of fit

Based on table 3, the results of the model test can be seen that the Chi-Square index value (CMIN) or p-value < 0.000 has inappropriate criteria because the data is significant, which means that there is a difference between theoretical and empirical data. According to Hair et al.(2014), a large sample size will make it more difficult for the model to achieve a statistically insignificant Goodness of fit index, so Chi-Square (CMIN) or p-value is one of many ways to measure the goodness of fit a model. Hence, it requires the value of other goodness of fit indicators. Meanwhile, the CMIN/DF value has appropriate

criteria with a value of 2.029 < 3.00. Meanwhile, TLI and CFI have values of 0.961 and 0.976, which means they are in the proper criteria. On the other hand, the RMSEA index with a value of 0.032 corresponds to the cut-off value or is feasible. The GFI and AGFI indexes with values of 0.987 and 0.975 correspond to the cut-off values from the results of the GFI and AGFI indexes of the SEM model. Overall, the above model is acceptable, or the central hypothesis is accepted, which means there is a significant influence between peer influence and self-esteem on cyberbullying through empathy.

The model also explains how the peer influence variable predicts cyberbullying, which means that negative peer influence (p = -0.312; p <0.05) and negative empathy (p = -0.044; p <0.05) can predict cyberbullying.

Discussion

Overall, the theoretical model can be empirically proven through research findings supporting Bandura's (1978) social cognitive theory. First, peer influence places adolescents as perpetrators of cyberbullying. Teenagers tend to be easily influenced by their social environment without considering the positive or negative effects they will receive when doing certain internet activities, and teenagers have positive normative beliefs about this behaviour (i.e. when teenagers believe that their peers approve of this behaviour) (Qomariyah, 2011; Xiao and Wong, 2013; Irmayanti and Grahani, 2016). Furthermore, Maxwell et al, (2016) states that conflicts in cyberspace occur because of negative attitudes towards individuals and other groups, where their presence is considered a threat by individuals, causing negative emotions and leading to cyberbullying. The characteristics of interaction and communication in cyberspace bring new developments in understanding communication and interaction between social groups and discriminatory behaviour of individuals. Interactions in cyberspace have been mainly text-based, so those involved in online communication need more information than conveyed traditionally or face-to-face (Abele, 2011; Adegboyega et al, 2019).

These two personal factors place self-esteem and empathy as predictors of cyberbullying behaviour. The findings in this study indicate that self-esteem has no direct effect on cyberbullying. It is proven that self-esteem with cyberbullying has inconsistent results where several studies state positive self-esteem towards cyberbullying (Healy, 2013; Brack & Caltabiano, 2014; Xu, 2016; Burns, 2017; Ding et al., 2018), while some researchers also expressed negative self-esteem towards cyberbullying (Coelli et al., 2005; Betts, Houston & Steer, 2015; Xu, 2016; Burns, 2017; Ding, Wang & Liu, 2018). Not only does it have a positive or negative correlation, but self-esteem and bullying in cyberspace do not directly correlate (Sari et al., 2017; Syafris, 2017). The relationship between self-esteem and cyberbullying is not always consistent. This is caused by several factors that influence it. First, differences in measurements or using different measuring tools can produce different results about cyberbullying (Kowalski et al., 2014; Hidajat et al., 2023).

Two different social contexts Cyberbullying can occur in various social contexts, such as in the school environment, workplace, or on social media (Hinduja & Patchin, 2014). Each social context has different characteristics and dynamics, so individual responses to cyberbullying can differ depending on the social context. For example, individuals with high self-esteem may more easily cope with cyberbullying at work than at school. The three demographic differences between study participants can affect the relationship between self-esteem and cyberbullying (Meng & Zhu, 2010). For example, factors such as age, gender, ethnicity, and socio-economic background can influence how individuals respond to cyberbullying and their levels of self-esteem. The research of Kowalski et al., (2012) can affect the relationship between self-esteem and cyberbullying. For example, factors such as age, gender, ethnicity, and socio-economic background can influence how individuals respond to cyberbullying and their levels of self-esteem. In addition, low

socio-economic background and specific ethnicity can also increase the risk of cyberbullying (Hinduja & Patchin, 2014). Fourth, because the context of online communication and offline communication is different, computer-mediated interactions or communications have more significant anonymity potential than offline communications (Christopherson, 2007; Hermawan, Soetjipto and Rahayu, 2016). In online communication, a person can experience social pressure and bullying more easily and quickly because messages or actions that are disrespectful or demeaning can easily be spread via social media or messaging applications. Therefore, individuals with low self-esteem tend to be more vulnerable to cyberbullying.

On the other hand, in offline communication, social pressure and bullying occur directly and are visible to others. Hence, individuals who bully are more concerned about their actions' social and moral consequences. Therefore, the relationship between self-esteem and cyberbullying can be more consistent in offline communication.

Furthermore, empathy significantly influences cyberbullying, meaning that the higher the empathy, the lower the adolescent does cyberbullying. In addition, empathy is also positively correlated with helping and prosocial behaviour (Hoffman, 2001; Eisenberg et al., 2006). This finding aligns with research by Yang et al. (2020) which states that adolescents with positive empathy are less involved in cyberbullying. Empathy is also considered a relevant predictive factor in cyberbullying behaviour (Ang and Goh, 2010; Steffgen et al., 2011; Casas et al., 2013; Utomo, 2022). Not only as a predictor, but empathy also mediates self-esteem towards cyberbullying; Individuals with higher self-esteem tend to have higher empathy and are less likely to cyberbully. Because affective and cognitive empathy plays a vital role in feeling the experiences of others, emotional regulation, and positive feelings towards others, all of which can prevent cyberbullying (Håkansson & Montgomery, 2003; Singer & Klimecki, 2014).

Increasing empathy can be supported by increasing self-esteem and positive peer influence. In increasing self-esteem by increasing positive aspects within oneself, it is explained in the findings of Şimşek & From (2011), indicating that if adolescents have positive self-esteem, then at the same time, they have high empathy. Adolescents with positive self-esteem tend to have more self-concepts; they understand others and can shape and influence others (Eisenberg, 2002; Laible et al, 2004; Eisenberg & Eggum, 2009). Whereas in increasing positive peer influence by increasing the normative and informative aspects (Stephan & Stephan, 1985), the normative aspect refers to the influence that arises from the need for adolescents to be accepted and recognized by their peer group. Under the normative influence, adolescents tend to adjust their behaviour to conform to group expectations and norms, even if it conflicts with their beliefs. For example, if a person's peer group has positive values that emphasize the importance of education, then individuals in that group may feel compelled to prioritize schoolwork and study diligently. The informative aspect, on the other hand, refers to the influence arising from the information or views provided by the peer group. Teenagers can change their behaviour or decisions because they assume that the information or views provided by their group are valid or valuable. For example, suppose a person's peer group introduces a habit that was previously unknown to the individual, such as reading a book or practising a sports activity. In that case, the individual may be motivated to imitate and start making the habit.

Conclusion

Overall, this research has explained the factors that influence cyberbullying behaviour. First, Peer influence and empathy correlate directly to cyberbullying, and empathy mediates self-esteem towards cyberbullying.

Recommendation

For students to increase empathy to prevent cyberbullying behaviour, it is hoped that school agencies will contribute to preventing bullying behaviour in cyberspace by developing prevention programs for adolescents, especially students, one of which is increasing empathy.

Suggestion

This research is still limited to cyberbullying perpetrators, so future research is expected to explore the characteristics of cyberbullying based on victims and bystanders. This research must explore the predictors influencing cyberbullying and educational programs to prevent cyberbullying by increasing student empathy.

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