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Cyber Aggression of Students: The Role and Intensity of the Use of Social Media and Cyber Wellness

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Cyberspace aggression is a behaviour that is a relatively new phenomenon which can have significant consequences for young people's wellbeing due to the specific technological affordances of social media. This research is an investigation of the contribution of access intensity to the use of social media and cyber skills in the form of youth cyber wellness on cyber aggression behaviours. The study involved 283 high school students, aged 15-21 years in Kota Padang, Indonesia, using a self-report scale approach. The results of multivariate regression tests with ANCOVA show that the intensity of using gadgets and cyber health was proven to contribute to student cyber aggression even though the intensity of using social media separately had no significant effect on cyber aggression behaviours. The MANOVA test results explain that there were differences between cyber health and cyber aggression on male and female students.

Keyword: *Cyber Aggression, Cyber Wellness, Social Media.*

Introduction

The development of information technology gives people the freedom to express their thoughts and feelings through social media. Sometimes, conflicts in cyberspace are caused by negative attitudes towards other individuals or groups based on in-group perceptions by individuals as representatives of out-groups (Rosenberg, 2001; Shklovski et al., 2012; Jane, 2015). Hater behaviour arises because of displeasure shown by certain people or groups to the behaviour, lifestyle, statements, and performance or activities of other people or groups. The term hater behaviour is used in this article is a term with an expression of cyber hatred. Cyber hatred is cyberspace aggression which is the behaviour of spreading hate messages through internet media and social networking sites, content creation through websites, blogs, instant online messages through apps such as Facebook, WhatsApp, Line, etc. through cell

phones and computers (Jaishankar, 2008; British Institute of Human Rights, 2012; Jablonska & Polkowski, 2018).

Conflicts on social media commonly occur because of the expression of messages and comments that do not empathize with the reported events or inappropriate and excessive responses to the problems spread on social media. This leads to pros and cons that spark debate and disputes that result in people attacking each other online. Research on one-way communication on social media shows that the delivery of messages or comments on social media makes individuals only focus on personal interests called self-interest. Chiou et al. in Ueberall (2016) state that self-interest makes individuals only have a frame of reference to themselves when making social judgments. This makes it more difficult for individuals to take other people's perspectives, in this case, the key needed to develop empathy and critical thinking. This means that individuals who have high self-interest in their online interactions will lack empathy so that they are easily trapped in hate speech behaviour or cyber aggression.

In the last few years, there have been many studies on cyber or cyberbullying aggression that focus on teenagers and students as the research subjects, especially high school students, both as perpetrators and victims. Youth groups or students are very relevant for the analysis of perpetrators and victims of violence through the internet since cyberbullying actions require the use of information and communication technology (ICT). Also, if they are compared to adults, they are more media literate and more intensive in using it in everyday life. Furthermore, aggressive or deviant behaviour often appears during adolescence because it is associated with stages of development (Ortega-Ruiz dan Gómez-Ortiz, 2017).

Lesure-Lester (2000) shows a positive relationship between empathy and interpersonal aggression, where empathy will differently predict interpersonal aggression and behaviour compliance among teenagers who are abused by peers. Similar research that links empathy with aggressive behaviour is the study by Ang & Goh (2010) examining the relationship between affective empathy, cognitive empathy, and gender with cyberbullying. The results showed a significant three-way interaction. Young men and women who have low cognitive empathy have a higher potential in cyberbullying. Exposure to violent media can increase aggressive behaviour, thoughts, and emotions in adults and children.

Cyber Aggression

From the literacy search analysis, we can conclude that the different terms used in several studies are because each of them has conceptual considerations based on differences in scientific approaches and the measurement constructs of the studied variables. Another concept used to explain online attack behaviour is cyberbullying. Cyberbullying is a more specific concept of cyber-attacks because it is intuitively considered inappropriate to explain

the behaviour of attacks on social media. Corcoran et al. (2015) state that cyberbullying is not the most appropriate term to describe violent and attacking behaviour in cyberspace or online because the existing definitions of cyberbullying often include traditional intimidation criteria such as intentions to hurt, repetition, and power imbalances between the perpetrator and the victim. Meanwhile, the unique nature of cyberspace-based communication is difficult to be identified by having this criterion. The dynamics of individual communication behaviour are complex and continue to grow in line with the development of communication technology devices. These devices continue to change some of the latest research with the conceptualization of the term cyberbullying behaviour by shifting attention to the broader cyber problem of aggression, rather than surviving with a narrow focus on the concept of cyberbullying (Pyzalski, 2012; Smith, 2013; Lerner, 2013; Corcoran et al. 2015).

The study of attack behaviour on the internet, primarily through social media in the last few years, is very intensive, given the rapid development of information and communication technology or ICT, especially social media. This can be seen from the new terms used in research journals that discuss violent behaviour or cyber aggression in individual interactions in cyberspace or online such as hate speech (cyberhate, online hate speech), assault or cyber aggression (cyber aggression, cyberbullying, and electronic aggression), cyber victimization, cyber harassment (Smith, 2013; Pyzalski, 2014; Jubany & Roiha, 2015; Gagliardone et al., 2015; Corcoran et al., 2015; Walters, Brown, & Wiedlitzka, 2016; Álvarez-garcía et al., 2016). In general, these concepts refer to the forms of online attack behaviour based on hostility, anger, and hatred, using information technology aimed at harassing, intimidating individuals or groups that spread anti-ethnic, religious, and racial messages, fanatical radical understanding, and even terrorism.

Social Media

Social media is a term that is currently used to describe a new form of media that involves interactive participation. Social media develops as digital and cellular technologies increase and makes interaction on a large scale becomes easier for individuals. One individual can talk with many people, and instant feedback is a possibility. Individuals can search for information from several sources and to dialogue with others through forum messages about the information posted (Bessi et al., 2015). This is the essence of the ongoing revolution is social media. In general, social media application services do not restrict users, both in terms of age and gender, social status, and education. In its use, it seems that everyone who has an account on social media is free to express their thoughts, feelings, and attitudes towards something in their account. This makes the style in their speaking process often represent status and social identity. This condition is sometimes not realised by the users of social media, so that intentionally or not, many people use words or sentences which insinuate, ridicule, insult, accuse, threaten, and sue.

Social media exacerbates aggressive behaviour by making violent content easily accessible, and further reinforcing the existence of aggressive behaviour committed by teenagers in the real world (Nilan et al., 2015; Mishna et al., 2018). The involvement of educational institutions in controlling hate speech behaviour on social media or online hate speech at the international level has been done by assisting students or teenagers. This movement has become a UNESCO program by publishing series books relating to student behaviour and internet or cyberspace freedom. One approach offered in the book to control online hate speech behaviour is citizenship education or what is called digital citizenship and digital citizenship education (Gagliardone et al., 2015).

Citizenship education and digital citizenship education focuses on how the students are responsible for using digital information media, especially social media. One of these primary objectives is to increase awareness of the political, social, and cultural rights of individuals and groups, including freedom of speech and the responsibilities and social implications that arise from it. In some cases, this program also develops the ability of argumentation and effective communication skills needed to convey their personal beliefs and opinions critically and respectfully. In essence, the program is to develop positive skills in students using good and responsible social media called cyber wellness (Mary, 2016).

Cyber Wellness

Cyber Wellness (CW) refers to the positive welfare of internet users. This involves an understanding of online behaviour and awareness of how to protect oneself in cyberspace (Mary, 2016; Sumarno & Wibawa, 2018). The focus of cyber wellness (CW) is about the ability of students to be responsible for digital learners. When navigating cyberspace, students must show respect for themselves and others and practice safe and responsible use. Students must also be a positive peer influence by utilising technology for collaboration, learning and productivity, and encourage the positive use of technology for the good of society.

Based on the explanation of the problem above, the authors feel the need to find solutions and strategies to overcome the problem of deviant cyber behaviour by involving all parties, including the community, government, and in this case, educational institutions. This is because schools can change their behaviour gradually by emphasizing learning materials to improve the normative quality of behaviour such as aspects of morality, discipline, humanistic care, honesty, ethics, and an empathic life. Therefore, the authors are interested in examining how intentions and behaviour of adolescent cyberspace aggression. This will be based on the role of attitudes, subjective norm values, behavioural control, and the extent of their cyberspace health capabilities in developing positive behaviour when using social media to prevent online hate speech online to the teenagers on social media (Carroll, J.A. & Kirkpatrick, 2011).

From the background above, this article aims to examine more in-depth the dynamics of cyber aggression behaviour with a theoretical framework approach. This will be especially applicable to those related to online communication characteristics and the dynamics of factors that contribute to cyber aggression by individuals on social media. This article aims to discuss issues related to how the theoretical framework in explaining the behaviour of cyber aggression and some predictors that are considered antecedents. One of the factors that will be appointed by researchers in this study is the factor of access intensity to the use of social media and adolescent cyber wellness skills. Is there a possibility that adolescents engage in cyber-aggression behaviour because of the intensity of the excessive use of social media? Is it because of the lack of cyber wellness skills that have trapped students in cyber aggression behaviour or online hate speech? Do the adolescents fully understand the ethical procedures of social media to avoid such cyber aggression behaviour? From the research above problems, the research hypotheses are proposed as follows:

H1: Does the intensity of using gadgets and cyber wellness contribute to student cyber aggression?
H2: Are there differences in cyber well-ness and cyber-aggression of students based on gender?

Methods

Participants

The total samples are 283 students, consisting of 199 females (70.3%) and 84 males (29.7%), aged 15-21 years studying at high school in Padang city, Indonesia. The population in this study includes high school students in the city of Padang, who actively use social media. The sampling technique used to get participants is purposive sampling, which is the method of selecting subjects based on criteria established by researchers.

Measurement

The data collection method is using a 1-4 Likert scale. All data collected is processed using of SPSS 20 Version software. Instrument testing is needed before data analysis is carried out, instrument testing is carried out with validity and reliability tests (Souza, Alexandre, & Guirardello, 2017).

Testing the validity of the instrument is done by correlating each item score to the total score using the Pearson Correlation (Product Moment) technique. Test criteria state if the correlation coefficient (riT) ≥ correlation table means the questionnaire items are declared valid or able to measure the variables measured so that it can be used as a data collection tool. The summary of validity testing results is as the following table:

Table 1. Validity Test

Variable	Item	Validity Coefficient	Table Correlation	Validity
Cyber-aggression	Y1.1	0.592	0.361	Valid
	Y1.2	0.485	0.361	Valid
	Y1.3	0.663	0.361	Valid
	Y1.4	0.600	0.361	Valid
	Y1.5	0.684	0.361	Valid
	Y1.6	0.674	0.361	Valid
	Y1.7	0.634	0.361	Valid
	Y1.8	0.893	0.361	Valid
	Y1.9	0.897	0.361	Valid
	Y1.10	0.889	0.361	Valid
	Y1.11	0.940	0.361	Valid
	Y1.12	0.852	0.361	Valid
	Y1.13	0.936	0.361	Valid
	Y1.14	0.902	0.361	Valid
	Y1.15	0.933	0.361	Valid
Cyber wellness	M1.1	0.472	0.361	Valid
	M1.2	0.655	0.361	Valid
	M1.3	0.695	0.361	Valid
	M1.7	0.610	0.361	Valid
	M1.8	0.482	0.361	Valid
	M1.10	0.596	0.361	Valid
	M1.12	0.698	0.361	Valid
	M1.13	0.688	0.361	Valid
	M1.15	0.683	0.361	Valid
	M1.16	0.446	0.361	Valid
	M1.17	0.678	0.361	Valid
	M1.18	0.561	0.361	Valid

The cyber aggression scale of students in this study is a modification of the Cyber-Aggression Typology Questionnaire (CATQ) and the Cyber-aggression Questionnaire for Adolescents (CYBA) (Álvarez-garcía et al., 2016; Runions, Bak, & Shaw, 2016). This scale consists of 19 items divided into two favourable and unfavourable patterns using a Likert scale approach, i.e. self-reporting to measure the behaviour of respondents with alternative answers using a scale of 1 to 4. The scale was reliable (alpha= 0.958) with (M= 1.419). The cyber wellness scale of students in this study was developed based on three indicators of cyber well-being, namely, Respect for Self and Others, Safe and Responsible Use, Positive Peer Influence. This was developed from Mary (2016) and Solms (2019) by using a Likert scale approach including self-report to measure the behaviour of respondents with alternative answers using a scale of 1 to 4. The scale was reliable (alpha= 0.839.) with (M= 3.675). The summary of reliability test results is as the following table:

Table 2. Reliability Test

Variabel	Cronbach's Alpha	Cut Off	Reliability
Cyber aggresi	0.958	0.7	Reliabel
Itensi	0.843	0.7	Reliabel
Cyber Wellnes	0.839	0.7	Reliabel

Based on Tables 1 and 2, the composite reliability value on the variables of attitudes, norms, behavior, intuition, cyber aggression, and cyber wellness is greater than 0.7. Therefore, the calculation of the composite reliability of all the indicators that measure variables of attitudes, norms, behavior, intuition, cyber aggression, and cyber wellness is declared reliable.

Data analysis

This study uses ANCOVA analysis to examine the role of cyber wellness and the intensity of internet use towards cyber aggression. This analysis is a covariance analysis used to test whether or not there is a difference in the average of a dependent variable between two groups by controlling for other variables that affect the dependent variable (Field, 2012). The additional analysis uses MANOVA analysis to examine differences in cyber aggression and cyber wellness based on gender. The MANOVA test is used to determine the presence or absence of differences between several independent variables and the dependent variable, and each variable has two or more levels. Data analysis was performed using SPSS 20 for Windows.

Results and Discussions

The results of descriptive analysis of cyber aggression among students show that 17.2% of the respondents use social media to insinuate and attack each other and finally become enemies. Most of them are female students. 8.6% of the respondents sometimes sort of people who are opponents on social media, 7.6% of the respondents send threatening messages to enemies or people who antagonize them through social media. Meanwhile, the posts addressed to the ruling party seem to be unfair on social media, in which 7.6% of the respondents have criticized the government with harsh words, 4.1% of the respondents sometimes curse the police, and 5.8% of the respondents sometimes curse the President, and 3.8% of the respondents sometimes berate the parliamentarian. Also, posts attacking others show that 8.6% of the respondents sometimes berate artists who are not liked, 4.1% of the respondents have made fun of other tribes and ethnicities on social media, and 6.2% of the respondents sometimes they curse teachers.

Descriptive analysis for cyber wellness explained by 30.7% of the respondents with an average score of the item of 3.50 shows that most respondents tended to be spontaneous in posting something on social media without thinking much further. 40.2% of the respondents agreed to carefully to post something to not being harassed by other people on social media. 36.1% of the respondents agreed that they need to think of the impact to other people when they want to post something on social media. 29.6% of the respondents strongly agreed that before they post something on social media, they should think of its impact to other people.

Less than 30% of the respondents said that they usually spend a lot of time chatting or playing online games with their gadgets.

Before testing the hypothesis, the homogeneity test was conducted based on the Levene Test to know the value of F = 1,406 (p = 0.222> 0.05), and the data in this study was homogeneous. Therefore, the assumption of homogeneity was fulfilled as the results can be seen in Table 3.

Table 3. Levene Homogeneity Test of Equality of Error Variances[a]

Dependent Variable: Cyber_Aggression

F	df1	df2	Sig.
1.406	5	277	.222

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.
a. Design: Intercept + Cyber_wellnes + Intensity

The next analysis was hypothesis testing. The proposed hypothesis stated that there is a contribution to the intensity of using gadgets and cyber wellness to cyber aggression. Data analysis was performed using an ANCOVA statistical test in Table 3.

H1: There is a contribution to the intensity of using gadgets and cyber wellness to cyber aggression.

Table 4. ANCOVA TEST

Source	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1095.261	10.061	.000	.179
Intercept	18675.398	171.550	.000	.383
Cyber wellness	5580.324	51.260	.000	.157
Intensity	109.044	1.002	.417	.018
Error	108.863			
Total				
Corrected Total				

Table 4 shows that the F value for the Corrected model is 10.061 (p = 0.000, p < 0.01). Thus, it can be concluded that cyber wellness and the intensity of using gadgets contribute to the cyber aggression, i.e. 17.9%. Separately, the intensity of using gadgets does not contribute significantly to cyber aggression. Cyber wellness separately contributes significantly to cyber aggression, i.e. 15.7%.

The second analysis was conducted to examine differences in cyber wellness and cyber aggression based on gender. This was done at the same time to answer the second hypothesis of this research.

H2: There are differences in cyber wellness and cyber aggression based on gender.

Data analysis was performed using MANOVA statistical test as the results can be seen in Table 5.

Table 5. MANOVA TEST RESULTS

	Effect	Value	F	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.988	11165.560[b]	280.000	.000	.988
	Wilks' Lambda	.012	11165.560[b]	280.000	.000	.988
	Hotelling's Trace	79.754	11165.560[b]	280.000	.000	.988
	Roy's Largest Root	79.754	11165.560[b]	280.000	.000	.988
Gender	Pillai's Trace	.213	37.886[b]	280.000	.000	.213
	Wilks' Lambda	.787	37.886[b]	280.000	.000	.213
	Hotelling's Trace	.271	37.886[b]	280.000	.000	.213
	Roy's Largest Root	.271	37.886[b]	280.000	.000	.213

Table 5 shows that the value of F Wilks Lambda = 37.886 ($p = 0.000$, $p < 0.01$). Thus, it can be concluded that there are significant differences in cyber wellness and cyber aggression based on gender. The contribution of gender to cyberspace health and cyberspace aggression is 21.3.

Table 6. Differences in Cyber Wellness and Cyber Aggression by Gender

Source	Dependent Variable	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	Cyber aggression	7249.402	69.363	.000	.198
	Cyber wellness	722.089	26.282	.000	.086
Intercept	Cyber aggression	227002.816	2171.996	.000	.885
	Cyber wellness	393680.704	14328.817	.000	.981
Gender	Cyber aggression	7249.402	69.363	.000	.198
	Cyber wellness	722.089	26.282	.000	.086
Error	Cyber aggression	104.513			
	Cyber wellness	27.475			
Total	Cyber aggression				
	Cyber wellness				
Corrected Total	Cyber aggression				
	Cyber wellness				

In Table 6, separately, cyber-wellness differed significantly based on their gender, which was known from an F value of 26.282 ($p = 0.000$, $p < 0.05$), i.e., 8.6%. In cyber aggression, there were also significant differences in terms of gender, which was known through an F value of 69.363 ($p = 0.000$, $p < 0.01$). The more detail information about the difference in average cyber aggression and cyber wellness based on gender can be seen in Table 5.

Table 7. Average cyber aggression and Cyber Wellness by Gender

Dependent Variable	Gender	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Cyber aggression	1.00	36.536	1.115	34.340	38.731
	2.00	25.457	.725	24.031	26.884
Cyber wellness	1.00	39.071	.572	37.946	40.197
	2.00	42.568	.372	41.836	43.299

Table 7 shows that the mean cyber aggression on males and females was 36.536 and 25.457, respectively. Thus, it is known that the mean cyber aggression on the male was higher than women. In cyber wellness, it is known that the mean cyber wellness on males and females was 39.071 and 42.568 respectively. Thus, it is known that the mean cyber wellness on a female is higher than males. The more detailed information on these differences can be illustrated in the following graph in Figure 1.

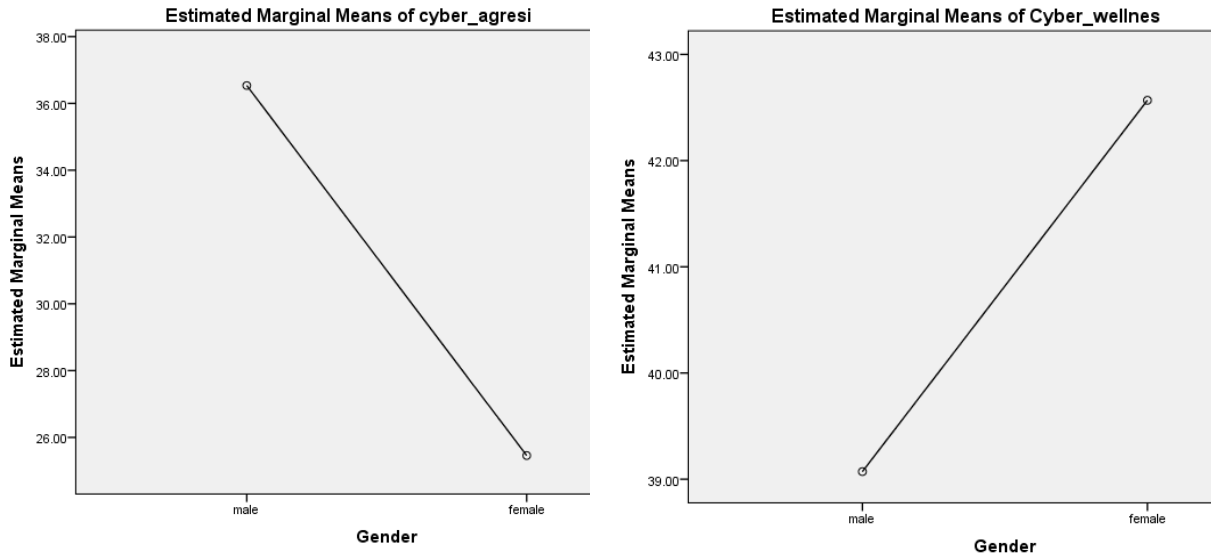

Figure 1. Difference between Cyber Aggression and Cyber Wellness by Gender

Characteristics of adolescents who are always attracted to something new and want to do new things cause the world of adolescents to not be separated from technology, especially information and communication technology. Almost all the time and daily life of adolescents, especially those in urban areas and even in non-isolated villages, teenagers have used the internet or information and communication technology (ICT) media. Excessive use of ICT has the potential for internet abuse in adolescents and often leads to cyber-aggression behaviour (Parti, Kiss, & Koplányi, 2018; Mishna et al., 2018).

Cyber aggression is a deliberate attack on others carried out through electronic means such as computers and cell phones (Wright & Li, 2013; Modecki & Barber, 2013; Baldry et al. 2015).

In other words, it is a behaviour carried out on the internet intended to hurt someone both psychologically and emotionally. Young internet users are rapidly adopting the online arena, where there is greater freedom supported by perceived anonymity and lack of external control. Language in cyberspace lacks vocal and visual cues that will communicate each feeling involved in it, resulting in misunderstandings, such as facial expressions and body language.

Based on the results of multivariate regression statistical tests, both ANCOVA and MANOVA in this study, it can be concluded that both hypotheses of the research assumed previously can be proven. However, the intensity of using social media separately does not significantly influence both cyber aggression behaviour and cyber wellness. This study reinforces the assumptions of the previous research explaining that students are often involved in aggressive online actions demonstrating inferior emotional control abilities and sometimes are also involved in manipulative emotional interactions. Those who spend more time online tend to be more active online and have a much higher level of aggression compared to those who are less active online. Runions et al. (2013) explain that, according to general theories of crime, aggression and antisocial behaviours have the same roots in low self-control, with changes caused by environmental influences. Reactive actions and instrumental aggression are closely correlated with the level of self-control, satisfaction, strength, and intensity of provocative stimuli, and are rooted at a young age when the search for identity is very intense.

Studies on traditional intimidation theories such as physical violence show that men are more involved in bullying than girls (Parrott & Lisco, 2015; Wang, Lei, et al., 2017). Several empirical studies have also found that in cyberspace, boys are more involved in intimidation than girls. In this case, girls often become the victims (Schnurr et al. 2013; Wright, 2017). In this study, it was found that the average cyber aggression done by male students was higher than female students, while cyber wellness done by female students was higher than male students.

Baldry et al. (2017) state that boys are significantly more likely to be school bullies than girls, especially through physical intimidation. Girls are more likely to be involved in relational victimization than boys. Boys are more likely to become cyberbullies than girls, and girls are more often 'just cyber victims' than boys. Women are more likely than men to post gossip online about other people to hurt them. It is in line with previous research findings that generally explain that women affirm participating in intimidation involving emotional and psychological abuse, including gossip and information dissemination (Underwood & Rosen, 2011).

Conclusion

The study of attack behaviour on the internet, especially through social media, is very intensive in recent years, considering the development of information and communication technology or ICT is currently very rapid. Some studies focus their research subjects on adolescents and students, both as perpetrators and as victims. This was done for several fundamental reasons, including the assumption that teenagers better understand the use of ICT and intensively use it in everyday life. The previous studies show that many factors influence adolescent cyberspace aggressive behaviour. Among the factors that encourage individuals or adolescents to carry out attacks online is because of the characteristics of communication within the network itself. Excessive use of ICT has the potential for internet abuse in adolescents and often leads to cyber-aggression behaviour. This is caused by personal factors of adolescents who are in psychological development, emotionally unstable, and easily ignited by anger. This research proves that gender differences, intentions of using social media, and cyber wellness of adolescents are parts of the factors that contribute to cyber aggression behaviour. Of course, this needs further study so that the efforts to pass interventions to prevent online aggression behaviour in adolescents can be made by various parties who have an interest in this issue.

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