

# Examining The Factor of Social Media Activities and Relationships of Cyberbullying Behaviour in Generation Z Indonesia

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**ABSTRACT:** This study focuses on analyzing factors that are significant to the occurrence of cyberbullying cases and identifying aspects of cyberbullying that have a significant influence on cyberbullying Behaviour in generation Z in Indonesia. The research method used is quantitative. The dependent variable in this study is cyberbullying and the independent variable is social media. The population of this study consisted of students from three provinces in Sulawesi, namely South Sulawesi, West Sulawesi and Central Sulawesi. Samples were taken from the third province of Sulawesi as many as 389 students using the proportional stratified random sampling method. Data analysis used the prerequisite test analysis approach through the data normality test and data linearity test using the ANOVA statistical technique using the JASP statistical application. The results of the study show that the factors that have a significant influence on cyberbullying Behaviour in generation Z students are the intensity of comments on social media. The intensity factor of using social media and the type of social media have no effect on cyberbullying Behaviour. Aspects of verbal written bullying and social exclusion have no significant effect on cyberbullying. The visual aspect of sexual bullying on cyberbullying Behaviour in terms of the intensity factor of giving comments on social media has a strong significant difference. Therefore it can be concluded that visually sexual negative comments are related to the level of cyberbullying Behaviour in Generation Z in Sulawesi, Indonesia.

## INTRODUCTION

The development of internet technology, informatics, and the virtual world has transformed individual communication styles through social media platforms, enabling complexity in the virtual world (Smith, Leonis, & Anandavalli, 2021). Individuals aged 20 and below, including the Generation Z teenagers, tend to have flexible time in using social media. The flexibility and practicality of individuals who can display happy, successful, sad, knowledgeable, and objectively real-life activities provide impetus that leads to positive and negative responses of individuals in the digital environment among the Generation Z in Indonesiaa (Lenhart & Madden, 2007; Sudrajat, 2020). Research conducted by Wijoyo (2023) ndicates that Indonesia falls into the category of countries with impolite digital world communication. The use of mobile devices, especially social media, among teenagers of this Generation Z age group, is revealed through several studies suggesting that besides social media, gaming has also become a part of life (Dewi et al., 2020).

The unrestricted use of social media can have negative impacts. Social media platforms that offer limitless freedom and uncontrolled usage bring forth several problematic issues (Erdoğan & Koçyiğit,

2021; Junius Fernando Et Al., 2022). Users of social media platforms who frequently encounter issues continue to increase among those aged 20 and below or Generation Z, who spend 10 hours and 36 minutes online, with a total of 1,940 cyberbullying cases in Indonesia (Ulfah, 2020). Cyberbullying is a problematic behaviour that tends to emerge in Indonesian society, thus making social media platforms vulnerable to crime and emotional outlets that carry risks (Ulfah, 2020).

Cyberbullying currently ranks at the peak of cybercrime alongside cases such as hacking and personal data leaks. Through social media, platforms openly harbor potential for manipulation, crime, and psychological problems. Text, images, voice messages, videos, and animations can be shared without regard for language etiquette, spreading uncontrollably to all users (Handono, Laeheem, & Sittichai, 2019; Li, Zahiri, & Jumaat, 2021). Speech acts that are offensive and emotionally hurtful to victims. The nature of cyberbullying in terms of privacy, spatial and temporal boundaries, and personal confidentiality eliminates the need for physical strength, posing a higher risk of becoming "victims of the virtual world" due to psychological, emotional, and social violence through cyberbullying (Umar, Rafli, Dilah, & Mentari, 2022). Based on Euajarusphan (2021) teenage victims of cyberbullying recount and document forms of mental violence they suffer, including a desire to drop out of school, feeling monitored by peers at school, and being unable to concentrate on studying due to fear and insecurity. This phenomenon brings about comprehensive life changes such as loss of online personal identity, changing schools, and even some teenage victims of cyberbullying not knowing who the perpetrators are.

Users can become victims and perpetrators in several cases on social media. In some instances, teenagers in Generation Z often experience academic, emotional, psychological, cognitive failures, and psychosomatic issues such as low self-esteem, disappointment, dissonance, anxiety disorders, loneliness, emotional instability, pessimism, agitation, depression, and even suicidal ideation (Collantes et al., 2020; Yunita, 2021). One study on common forms of cyberbullying behaviour reveals stalking and virtual harassment, leaking personal data without consent, hate speech, creating unauthorized false identities, and ostracizing others from certain groups or communities (Hawi & Samaha, 2017).

Such actions have a profound impact on victims in the digital world and greatly influence individuals to either practice or perpetuate cyberbullying. Cyberbullying causes individuals to become less empathetic (Erdur Baker, 2007), irritable, emotionally wounded (Ak, Özdemir, & Kuzucu, 2015), aggressive, and offensive, leading to psychological, social, and communication problems, mood disturbances, or an inability to control anger and stress (Watts, Wagner, Velasquez, & Behrens, 2017). Negative characteristics displayed also include adopting negative communication patterns and having the confidence to attack anyone (Machackova, Dedkova, & Mezulanikova, 2015).

The phenomenon of social media platforms has become the primary source of cybercrimes perpetrated against individuals. Cyberbullying is the most common action performed by users on social media (Turner, 2015). Users who experience cyberbullying behaviour should take preventive measures against crimes in their daily lives when using the internet or social media platforms. Conscious and controlled use of social media platforms can minimize cyberbullying behaviour (Deschamps & McNutt, 2016; Thumronglaohapun et al., 2022).

Research results regarding the identification of cyberbullying behaviours among Generation Z teenagers in Indonesia, particularly in South Sulawesi, reveal exposure to more severe threats (Umar et al., 2022). Identification of the current phenomenon's situation is essential so that teenagers can recognize and anticipate vulnerability to cyberbullying. However, concerning the frequency of cyberbullying occurrences, the specific forms of harassment, ostracism, and violence that may occur among Generation Z through social media intensity are not yet precise. Based on research findings, teenagers tend to be exposed to cyberbullying through hate speech, both visually, verbally, in writing, and social exclusion, which can lead to sexual violence. Therefore, studies require an in-depth

identification of the specifications of comment intensity that can influence teenagers' vulnerability to cyberbullying exposure (Lee, Abell, & Holmes, 2017).

This study focuses on analyzing significant factors in the occurrence of cyberbullying cases and identifying cyberbullying aspects that have a significant influence on cyberbullying behaviour among Generation Z in Indonesia. This research is essential in measuring the frequency of commenting on social media in cyberbullying behaviour among Generation Z samples, revealing the significance of this research.

## Theoretical Concept

Cyberbullying has been identified as intentional aggressive actions or Behaviours carried out by individuals or groups against victims repeatedly over time through information technology, which has become the primary focus of mental health (Olweus, 1994). The percentage of individuals experiencing cyberbullying is increasing and does not discriminate by age as technology advances. The negative effects of cyberbullying are severe due to the frequency and dissemination of information influenced by technology, such as psychological, physical, and cognitive health, depression, and high risk of suicidal ideation (Hamuddin, Syahdan, Rahman, Rianita, & Derin, 2022; Slonje & Smith, 2008).

Every type of social media can be used to engage in cyberbullying, with some platforms like Instagram, TikTok, Facebook, Twitter, and YouTube being the most vulnerable for cyberbullying (Pa, Mahmud, & Zainal, 2021). The cyberbullying model is detected through comments on social media that attract attention to specific comments reinforcing the cycle of cyberbullying (Hon & Varathan, 2015; Selkie, Kota, & Moreno, 2016). Specifically, this consists of comments reflecting negative language such as accusations, humor, and visuals on individuals' social media. The intensity of comments on social media can pose psychological dangers if individuals have experienced cyberbullying over time (Görzig & Frumkin, 2013; Rafiq et al., 2015).

Understanding the causal factors and types that lead to cyberbullying through the intensity of commenting reflecting negative emotions. Based on findings (Matamoros-Fernández & Farkas, 2021) it is revealed that communication through social media not only generates positive words. There are six types of negative connotation words detected through Twitter applications, namely adjectives, nouns, verbs, animal names, foreign language curses, and adverbs (Arisanty & Wiradharma, 2022). Research findings by Chan et al. (2013) suggest that through social media comments, three forms of cyberbullying can be encouraged through flaming or textual, verbal, and visual comments such as sexual comments, insults, humiliations, and taunts that affect individuals' environments. Factors driving flaming include individual group factors, individuals' inability to manage thoughts and feelings communicated on social media, and miscommunication among users (Pasaribu & Wulan, 2020).

## Rationale of Study

Yoo (2021) demonstrates that access to social media provides users with opportunities to engage in and experience cyberbullying. Lee et al. (2017) Generation Z, who experience cyberbullying, reveals that one influence of negative messages through online communication and interaction correlates with cyberbullying. Moreover, the intensity of cyberbullying among Generation Z not only involves negative verbal comments but also extends to visual sexual bullying actions, such as distributing embarrassing and harmful vulgar photos of someone (Udayana, Widiantara, & Karma, 2022).

## Hypothesis

The hypothesis of this study is to examine factors influencing cyberbullying behaviour through three aspects: the intensity of social media usage, the intensity of commenting on social media, and

the types of social media. this relationship is mediated by verbal and written bullying, visual sexual bullying, and social exclusion.

H1: The intensity of social media usage and commenting on social media significantly influences the occurrence of cyberbullying.

H2: Cyberbullying behaviour occurring among students significantly correlates with the intensity of commenting on social media.

H3: Verbal, written bullying, visual sexual bullying, and social exclusion significantly influence the intensity of commenting on social media in cyberbullying behaviour.

## METHODS

### Design

The research method employed is quantitative. The dependent variable in this study is cyberbullying, and the independent variable is social media. The social media variable is classified into three subcategories: social media usage intensity (X1), intensity of commenting on social media (X2), and type of social media (X3). Each sub-variable of social media is tested for its relationship with the cyberbullying behaviour variable, which is divided into three aspects: verbal, written bullying, visual sexual bullying, and social exclusion.

### Participants

The population of this study consists of students from three provinces in Sulawesi, namely South Sulawesi, West Sulawesi, and Central Sulawesi. The population size is identified for each province, with 10,000 students from South Sulawesi, 5,000 from West Sulawesi, and 8,000 from Central Sulawesi. The determination of the sample size in the study uses the proportional stratified random sampling method. The use of the proportional stratified random sampling method aims to ensure that the samples taken from each province are proportional to the population size of that province. The sample size from South Sulawesi is 162 individuals; from West Sulawesi, 81 individuals; and Central Sulawesi, 146 individuals. The total sample size taken from the three provinces is 389 students, which is the predetermined sample size. These results ensure that the sample reflects the diversity and characteristics of the population from the three provinces in Sulawesi. The research results are expected to have better validity and generalization for the Generation Z student population in these three provinces.

### Instruments

#### *Cyberbullying Behaviour*

This study utilized the Cyberbullying Behaviour instrument adapted from the questionnaire by [Lee, J., Abell, N., & Holmes, J. L. \(2017\)](#) titled "Validation of Measures of Cyberbullying Perpetration and Victimization in Emerging Adulthood" (Lee et al., 2017). This questionnaire contains statements about cyberbullying Behaviours perpetrated by respondents, such as sending insulting messages or posting demeaning content about others online, comprising 3 aspects: verbal written bullying with 4 statement items, visual sexual bullying with 6 statement items, and social exclusion with 2 statement items. The questionnaire will aid in evaluating the level of cyberbullying Behaviour tendencies among respondents, which in total consists of 12 statement items using a 4-point Likert scale modification with response options ranging from strongly agree, agree, disagree, to strongly disagree. The instrument has been piloted with students and subjected to confirmatory factor analysis to assess reliability and validity, presented in Table 1.

Table 1. Confirmatory Factor Analysis Instrument Test Cyberbullying Behaviour

Instrument	N	Reliability Test			Validity Test			
		McDonald's	Cronbach's	RMSEA	GFI	CMIN/DF	CFI	TLI
Cyberbullying Behaviour	389	.871	.860	.105	.984	267.470/51	.982	0.977
Verbal Written Bullying		.862	.860					
Visual Sexual Bullying		.862	.862					
Social Exclusion		.866	.865					

Note. N= Respondents

## Data Analysis

Data analysis utilized a pre-requisite test approach, starting with a normality test using the JASP statistical application, followed by a linearity test using the ANOVA statistical technique. The free and dependent variable data were considered linear if the Deviation from Linearity value  $> \alpha 0.05$ . The normality tests were conducted using skewness and kurtosis techniques within the range of -1.96 to +1.96, indicating data approaching normality. The normality test results for the cyberbullying behaviour variable are skewness: -2.92 and kurtosis: -1.94. Additionally, Q-Q plots for each variable were included as visualizations of data distribution. If the points in the Q-Q plot are close to the diagonal line, the data is considered to have a distribution close to normal. The Q-Q plot attachments can be seen in the following figure 1.

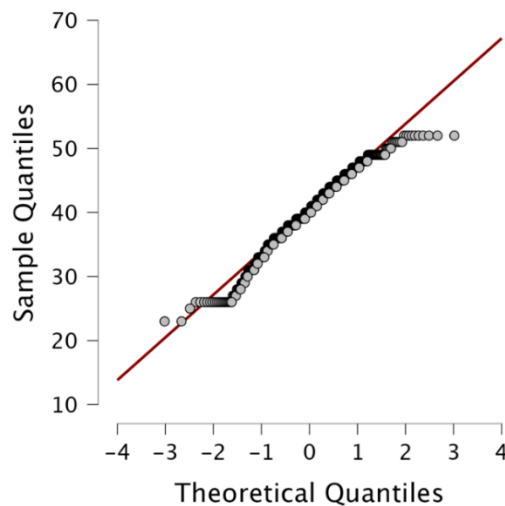


Figure 1. Q-Q Plot of Cyberbullying Behaviour

## RESULTS AND DISCUSSION

### Results

#### *Factors Influencing Cyberbullying Behaviour*

Based on the data analysis results in Table 2, the factors influencing cyberbullying behaviour among Generation Z students are as follows. The data analysis results for social media usage intensity show no significant influence on cyberbullying behaviour, with an M-square value of 70.698. The non-significant F value (1.554,  $p > .05$ ) indicates that there is no significant difference in cyberbullying

Table 2. Factors Influencing Cyberbullying Behaviour

	Factors Influencing Cyberbullying Behaviour	Sub-Factors	Mean	SD	M-Square	F	p
Cyberbullying Behaviour	Social Media Usage Intensity	Under 5 hours per day	40.314	6.298	70.698	1.554	.200
		5 hours - 10 hours per day	39.563	6.732			
		10 - 20 hours per day	41.351	6.893			
		Above 20 hours per day	37.800	10.986			
	Intensity of Commenting on Social- Media	Never	78.508	13.954	194.917	4.338	.014 **
		Sometimes	78.718	10.445			
	The Most Frequently Accessed Social Media Platforms	Often	77.389	11.770	23.657	0.515	.725
		Instagram;	39.687	6.999			
		Tiktok	40.129	6.727			
		Instagram;	40.594	6.711			
		Whatsapp	39.833	5.345			
		Tiktok;	38.313	6.096			

Note. N = 389 (Students from 3 Provinces: South Sulawesi, West Sulawesi, and Central Sulawesi)

\*\*\* (p value <.001)

\*\* (p Value<.01)

\*(p Value <.05)

behaviour among individuals with different durations of social media usage, namely under 5 hours per day, 5 hours - 10 hours per day, 10 - 20 hours per day, and above 20 hours per day.

It means that cyberbullying behaviour does not differ significantly among individuals with longer usage durations, indicating that those who spend more time tend to have a higher potential for cyberbullying compared to those with lower usage times. For example, individuals who only use social media for shorter periods may still have the potential to engage in cyberbullying behaviour. Additionally, the factor of the most frequently accessed social media platform also does not significantly influence cyberbullying behaviour, with an M-Square value of 23.657. The non-significant F value (.515,  $p > .05$ ) suggests no significant difference in cyberbullying behaviour among various frequently accessed social media platforms such as Instagram, Facebook, WhatsApp, and TikTok. It indicates that no single social media platform is particularly more vulnerable to cyberbullying behaviour than others. In other words, every social media platform has an equal potential to be a place where cyberbullying behaviour can occur. It suggests that the issue of cyberbullying is not limited to one specific social media platform or environment but instead is a phenomenon that can arise across various social media platforms.

The exciting findings indicate that factors significantly influence cyberbullying behaviour, namely the factor of commenting intensity, with an M-Square value of 194.917. The significant F value (4.338,  $p < .01$ ) suggests a significant difference in cyberbullying behaviour among individuals who frequently, sometimes, and rarely comment on social media. Thus, the higher intensity or the more active individuals are in commenting on social media, the more likely they are to have high

Table 3. Post Hoc Comparisons

		Mean Difference	SE	t	p <sub>tukey</sub>
1	2	1.191	.793	1.502	.291
	3	5.678	1.981	2.866	.012**
2	3	4.487	1.902	2.359	.049*

Note. P-value adjusted for comparing a family of 3

\*p-value < .05; \*\*p=Value < .01; \*\*\*p value <.001

1= Never; 2= Sometimes; 3=Often

interactions in the online environment and be active on various social media platforms, thereby increasing the likelihood of engaging in cyberbullying behaviour. Furthermore, individuals who sometimes comment on social media have lower interaction intensity than those who frequently comment.

### ***Differences in Cyberbullying Behaviour Based on Commenting Intensity on Social Media***

The post hoc test results in Table 3 indicate that there is no significant difference in cyberbullying Behaviour between students who never comment on social media and students who sometimes comment on social media platforms. The mean difference (MD) between these two groups is 1.191 with a standard error (SE) of 0.793. However, there is a strong significant difference in cyberbullying Behaviour between students who never comment on social media and students who frequently comment on social media. The mean difference (MD) between these two groups is 5.678 with a standard error (SE) of 1.981. Additionally, there is also a significant difference between students who sometimes comment on social media and students who frequently comment on social media. The mean difference (MD) between these two groups is 4.487 with a standard error (SE) of 1.902, see table 3.

Based on the data analysis results in table 4, it is shown that the aspect of verbal and written bullying in cyberbullying behaviour concerning the intensity of commenting on social media does not have a significant difference, with an M-Square value of 11.832. The non-significant F value (1.890,  $P > 0.05$ ) indicates no significant difference among students who never, rarely, and frequently comment on social media regarding verbal or written bullying. Furthermore, the aspect of social exclusion in cyberbullying behaviour regarding the factor of intensity of commenting on social media does not have a significant difference, with an M-Square value of 2.329. The non-significant F value

Table 4. Differences in Aspects of Cyberbullying Behaviour Regarding the Factor of Intensity of Commenting on Social Media

	Factors						
	Influencing	Sub-Factors	Mean	SD	M-Square	F	p
Cyberbullying Behaviour	Verbal	Never	13.229	2.443	11.832	1.890	0.152
	Written	Sometimes	12.914	2.539			
	Bullying	Often	11.846	2.075			
	Visual	Never	19.427	3.324	81.445	6.295	.002**
	Sexual	Sometimes	18.639	3.679			
	Bullying	Often	15.769	3.745			
	Social	Never	8.406	1.816	2.329	.701	.497
	Exclusion	Sometimes	8.318	1.842			
		Often	7.769	1.363			

Note. N = 389 (Students from 3 Provinces: South Sulawesi, West Sulawesi, and Central Sulawesi)

\*\*\* (p value <.001)

\*\* (p Value<.01)

\*(p Value <.05)



(.701,  $p > .05$ ) suggests no significant difference among students who never, rarely, and frequently comment on social media regarding social exclusion. However, the aspect of visual sexual bullying in cyberbullying behaviour regarding the factor of intensity of commenting on social media has a substantial significant difference, with an M-Square value of 81.445. The significant F value (6.295,  $p < .01$ ) indicates that there is a significant difference among students who frequently, rarely, and never comment on social media based on the aspect of visual sexual bullying in cyberbullying behaviour.

## DISCUSSION

Our findings encompass several results from previous research studies exploring the relationship between social media activity intensity and cyberbullying. This is consistent with the research by [Perera & Fernando \(2021\)](#) which found that every individual/user can access features available on social media, such as posting, sharing, and commenting ([Rosa et al., 2019](#)). Comments containing hate speech cannot yet be categorized as cyberbullying behaviour ([N. K. Dewi, Im Hambali, & Indreswari, 2023](#)). However, repetitive comments that are aggressive and lead to psychological impacts such as stress are categorized as cyberbullying behaviour ([Milosevic, 2016](#)). The research of [Amali & Jayalal \(2020\)](#) supports that social media has currently developed techniques to identify offensive content in social media comments; thus, using social media is not relevant to cyberbullying ([Salawu, He, & Lumsden, 2017](#)).

Meanwhile, the findings also reveal that all types of social media accessed by Generation Z do not significantly influence cyberbullying about the intensity of such behaviour. [Abaido \(2020\)](#) states explicitly that social media is developed to communicate with other individuals via the Internet; various types of social media are not solely used for cyberbullying but also aim to provide information and promote self-branding ([Lenhart & Madden, 2007](#)). These findings are supported by ([Hawi & Samaha, 2017](#)) who found that the intensity of cyberbullying occurring on certain social media types, with the highest level of cyberbullying behaviour found on platforms such as Facebook, Twitter, Instagram, and YouTube. These social media platforms continue to evolve by developing features to filter comments and posts and reach out to minimize cyberbullying against their users ([Pa et al., 2021](#); [Wilkins, Hoover, Miltenoff, & Downing, 2007](#)).

Cyberbullying is prone to occur due to the intensity of comments on a social media post. It refers to the significance of comments and the cyberbullying behavior of Generation Z. Consistent with research findings; it is suggested that through comments on social media as one of the application features, cyberbullying can be facilitated. This is because the more negative comments on specific posts, the higher the risk of cyberbullying ([Milosevic, 2016](#); [Shin & Ahn, 2015](#)). This is based on online environmental factors that influence users to mimic behaviours, as well as frustrations and individual characteristics, providing opportunities for cyberbullying ([Yoo, 2021](#)).

Cyberbullying, which refers to acts of visual sexual bullying such as sending messages containing vulgar images/videos to someone and then posting and disseminating them widely, is the most common problem in cyberbullying attacks ([Dani, Li, & Liu, 2017](#); [Rachoene & Oyedemi, 2015](#)). Research findings support this that one in four teenage cyberbullying victims tends to be attacked because they received messages containing such images/videos, which fall into the category of sexting, attracting visitors to comment rudely on photos or posts ([Leduc, Conway, Gomez-Garibello, & Talwar, 2018](#)). Such actions violate social norms in Indonesia when viewing photos in embarrassing and harmful situations ([Udayana et al., 2022](#)).

## Implications

The findings of this research have broad implications for theory, research, practitioners, and policies, particularly in preventing cyberbullying among Generation Z. Therefore, this study suggests



that future research should further explore the theory proposed by [Lee, J., Abell, N., & Holmes, J. L. \(2017\)](#) to ensure more measured interventions for both perpetrators and victims among Generation Z through professional experts or counselors. Several prevention methods may be supported by government regulations that can mitigate the adverse effects of cyberbullying crimes.

### **Limitation and Strengths**

In substance, this research has the advantage of being one of the few studies in Indonesia investigating cyberbullying among university students. Another strength is that this research examined respondents at three points in time and location. However, this research has some methodological weaknesses that may affect the generalization of these findings. Firstly, this research took a long time regarding the distribution and collection of surveys submitted to them. Although the researchers faced some setbacks and challenges, they did not affect the research outcomes. Secondly, there was no analysis of respondents regarding the overall Generation Z age classification from school age to employment. Given these limitations, we suggest that future researchers ensure a more accurate distribution of respondents.

### **CONCLUSION**

The findings suggest that the factor influencing cyberbullying among Generation Z through social media is significantly affected by the intensity of commenting on social media. The factors of social media usage intensity and accessed social media types by Generation Z do not significantly influence, meaning not all types of social media are used for cyberbullying behaviour in their usage intensity. There is no significant influence of social media commenting intensity on the aspects of verbal, written bullying and social exclusion, indicating that the levels of verbal, written and social exclusion are not correlated with the levels of cyberbullying. There is a significant relationship between visual sexual cyberbullying through comments on social media, meaning that negative visual sexual comments are associated with the levels of cyberbullying among Generation Z in Sulawesi, Indonesia. The implications of this research support the importance of conducting more research to further investigate unexplored types of cyberbullying harassment due to the intensity of commenting on social media. Users need to be encouraged to report any intimidating actions that may affect their mental and psychological health. Recommendations for future research include conducting further qualitative research to assess the socio-psychological impact of cyberbullying on victims, especially Generation Z teenagers.

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### **AUTHOR CONTRIBUTIONS STATEMENT**

All authors have read and approved the final version of the manuscript.

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