



Psychosocial Factors of Adolescent Cyberbullying: Social Anxiety, General Belongingness, and Social Connectedness

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Abstract

Cyberbullying is a form of violence committed through electronic contact, either individually or in groups to harm others psychologically. This study examines the psychosocial factors behind the phenomenon of cyberbullying from the perspective of victims, perpetrators, and both victims and perpetrators, namely social anxiety, general belongingness, and social connectedness. Data were collected from 377 students aged 16-18 years by the use of purposive random sampling. All measuring instruments used were translated into Indonesian Language by a sworn translator, and the validity and reliability were tested. The results of data testing using hierarchical multiple regression show that psychosocial factors like general belongingness, social anxiety and social connectedness partially influence cyberbullying with the biggest role coming from general belongingness in a negative direction. Meanwhile, the results of simultaneous testing show that the role of social connectedness is not visible because it is dominated by general belongingness and social anxiety. The findings of the test using support vector machine (SVM-AI) clearly show that cyberbullying is a real phenomenon among teenagers. The psychosocial factors behind the phenomenon of cyberbullying are primarily driven by individual needs which not only require connectedness that meets the need for affiliation, but also relationships based on trust and care.

Introduction

Generation Z teenagers, born between 1997 and 2012, were raised during the changes that marked the modern age, namely a world filled with the web, internet, smart phones, laptops, the availability of networks that can be used freely, and digital media. It is not surprising that this generation is very familiar with digitalization, carrying out non-stop communication processes by fully utilizing various communication tools or social media (Dolot, 2018). The ease of interacting via the network makes teenagers more involved with text messages in fostering communication with many people at almost the same time. This means that teenagers are continuously exposed to the influence of direct contact which often has dangerous impacts. Now, cyberbullying, which is a new form of violence through electronic media, is very interesting for many people because of its impact on adolescent mental health (Bottino et al., 2015).

Initially, traditional bullying behavior referred to a form of aggressive behavior carried out by students or groups of students intentionally and repeatedly directed at other students who could not defend themselves because they were in a weak position (Hymel & Swearer, 2015; Smith et al., 2019). Along with the spread of the internet network with the use of electronic devices such as computers and cell phones, the form of traditional bullying has changed into cyberbullying which is defined as any form of aggressive and deliberate action carried out by individuals or groups, using electronic contact, repeatedly and from time to time attacking

victims who are powerless to defend themselves or fight back (Campbell & Bauman, 2018). Both traditional bullying and cyberbullying are closely related to each other as found by (Hase et al., 2015) which showed that around 93% of students who experienced cyberbullying also experienced traditional bullying.

Over time, traditional bullying shows a decline while cyberbullying increases (Inchley et al., 2016), while based on age, both types of bullying increase at the secondary education level and will decrease thereafter (Guo, 2016; Smith et al., 2008). However, if we pay attention to gender issues, there are different findings regarding bullying patterns between men and women, namely that the percentage of men is greater in their involvement in bullying both as victims and as perpetrators (Smith et al., 2008), while literature studies show that women are more often in the position of victims of cyberbullying than men (Kowalski et al., 2019).

Cyberbullying behavior can reach a larger number of people because cyberbullying is in a virtual space that provides opportunities for individuals to express themselves freely without social control. In addition, information that has been uploaded to the website is difficult to delete (Bottino et al., 2015). That is why there are many negative impacts of cyberbullying both now and in the future, especially for victims (Schoeler et al., 2018), especially experiencing psychosocial maladjustment and even psychopathological disorders in adolescence and adulthood (Baier et al., 2019) and damage to self-reputation.

As a form of relational expression based on socio-relational problems that generally occur in schools, cyberbullying often occurs in the environment of children and adolescents (Menesini & Salmivalli, 2017) so it is undeniable that schools are the most important place to study the phenomenon of cyberbullying considering that in general adolescents are undergoing formal education. The number of researchers who pay attention to the phenomenon of cyberbullying can be seen from the number of studies that analyze cyberbullying and its relationship to psychosocial variables (Young et al., 2017). The results of other studies also confirm that adolescents involved in cyberbullying show symptoms of psychological problems (Wang & Kenny, 2014), especially in individuals who are cyber victims (Cénat et al., 2014). The relationship as mentioned can be seen through the tendency of adolescents who become cyber victims to isolate themselves, thus opening up the opportunity to develop emotional disorders such as anxiety and depression (Cénat et al., 2018; Hébert et al., 2016).

Despite the possibility of using social media positively, for example to make new friends and build socialization, maintain and preserve existing relationships, and to fulfill information and educational goals (Horzum, 2016), there are no less many (especially school students) who show problems in using online facilities negatively (Kuss et al., 2014).

Basically, the behavior expressed by using the internet is social behavior (Kırcaburun et al., 2019). The existence of daily social needs that cannot be met, for example social connectedness and general belonging can be found if individuals search for them in the virtual environment through media platforms, and ultimately will affect how often someone uses social media for social interaction (Kırcaburun et al., 2019).

Given the detrimental impact of cyberbullying, previous research results have identified a protective factor at the individual level, namely social connectedness. Social connectedness among students refers to the perception that students are part of their peers, namely that students will help each other, like each other, trust each other, and respect each other (Bradshaw et al., 2014). Lee and Robbin added as quoted by Kırcaburun et al. (2019) that social connectedness refers to the feeling in a person that he or she belongs to peers and the surrounding community which is formed from the experience of building relationships with people around him or her. This means that social connectedness among students is the basis of students' sense of

attachment or feelings of being part of other students' concerns and being part of the school (Lucas-Molina et al., 2022). Social connectedness plays an important role in developing adolescents' psychosocial lives. Individuals, especially adolescents, need and will seek out peers to establish social relationships (Wu et al., 2016). However, this closeness and social connection may also produce empathy. Empathy will control a person not to return their hurt feelings to people who have hurt them because they try to understand and ultimately forgive other people's behavior towards them (Safaria & Bashori, 2024).

Another protective factor that plays a role in cyberbullying is general belongingness (Kırcaburun et al., 2019). General belongingness is defined as an experience that a person encounters along with their involvement in a social environment (such as school) so that they can experience a feeling of connectedness and become part of the environment where they exist every day. (Checa & Oberst, 2022) stated that the need to belong in an individual is a basic motivation for humans in general to form, maintain, and maintain interpersonal bonds. This need to belong is universal and is also a predictor or mediator of adaptive and maladaptive behavior in online relationships (Casale & Fioravanti, 2018; Krämer et al., 2015). If belongingness is at a low and unsatisfactory level, it will lead a person to experience loneliness (Yildiz, 2016) and will be at risk of developing negative behaviors such as depression, low levels of life satisfaction and happiness, including reducing the state of well-being experienced by the individual (Swist et al., 2015).

According to Kırcaburun et al. (2019), psychosocial conditions that are at a low level will lead someone to make the internet a place of choice to continue to feel side by side with others in order to restore bad or low social-self so that it can reduce feelings of alienation. A person's efforts to find new people and build social networks or friendships through social media will foster feelings of support and freedom from loneliness.

Another factor that can increase the risk of students experiencing cyberbullying according to (R. Navarro et al., 2013) is social anxiety. Individuals with high social anxiety will have limitations in conducting face-to-face interactions. This limitation will encourage individuals to use the internet and social networks to communicate and form new friendships. Interacting via the internet will encourage individuals to have the courage to interact as often as possible even with people they don't know, and therefore have a greater chance of becoming victims of online relationships. A similar statement that anxious and socially withdrawn teenagers tend to be victims of bullying as stated by (Rubin et al., 2015).

The tendency of adolescents to withdraw from the social environment is the reason why these adolescents are unlikely to retaliate if they are bullied. Several research results show that cyberbullying has a negative impact on all individuals involved, and not just the victim (Quintana-Orts & Rey, 2018). Although the real impact is felt more by the victim, the facts show that there is an increased risk of disruption of psychosocial and emotional balance found in perpetrators or individuals who are not involved in cyberbullying. The two-way relationship between cyberbullying and internalizing problems has been widely supported by previous research results. The problems covered include social anxiety, which is the fear of facing negative judgment, and avoiding situations or people who are new to the world. (María C. Martínez-Monteagudo 1, 2020).

This study will comprehensively examine the partial and simultaneous influence of social anxiety, general belongingness, social connectedness, and demographic factors, namely age and gender, on cyberbullying among high school students. This model will provide novelty in the study of cyberbullying among generation Z, especially in the psychosocial context. Furthermore, the findings of this study can be used as an initial step in anticipating the negative

impacts of cyberbullying among generation Z, as well as to be used as a preventive measure so that efforts to create a generation with good mental health are not hampered by various unfavorable psychosocial conditions.

Methods

This study uses a survey technique with a quantitative descriptive method. Data were collected using a questionnaire in the form of a google form by visiting several high schools, asking students to fill out the questionnaire directly and immediately uploading it via the link provided. Furthermore, the data was analyzed using hierarchical multiple regression statistics to determine the effect of each independent variable on the dependent variable both simultaneously and partially. Followed by entering one by one the demographic data that was collected to determine its contribution. To complete it, the data was also analyzed using artificial intelligence (AI) with a support vector machine (SVM), an algorithm with the basic principle of finding the best hyperplane to separate two classes in the dataset. The distance between the hyperplane and the points of the two classes (support vectors) is the largest distance or "maximum separating hyperplane" because it has the maximum margin of the support vector.

From the data collection process, 377 participants were obtained, consisting of 187 (49.6%) females and 190 (50.4%) males. All participants are active students in several private junior and senior high schools in Bandung City with an age range of 16-18 years. This study used 4 (four) research instruments, all of which were translated into Indonesian by a sworn translator. The research instruments in question are (1) Cyberbullying scale constructed by Stewart et al., (2014). This measuring instrument has 14 items, after validity and reliability testing using exploratory factor analysis (EFA) showed that all statement items were valid with an index range of .51 - .71 and reliability of .88. Example item "Someone tries to avenge their hurt feelings by removing you from an online group." For this reason, 5 (five) answer choices are provided, namely 'Never'; 'Very Rarely'; 'Rarely'; 'Often'; and 'Very Often.', (2) Social Anxiety Scale for Adolescents (SAS-A) was constructed by La Greca, AM, & Lopez, N. (2012). This measuring instrument consists of 22 items divided into 18 self-statement items (Example item "I worry about what other people say about me") and 4 (four) filler items (Example item, "I like to exercise"). Using a Likert scale, each item has 5 (five) answer choices consisting of 'Strongly Agree', 'Agree', 'Neutral', 'Somewhat Agree', and 'Disagree.' SAS-A has three subscales, namely Fear of Negative Evaluation (FNE consisting of 8 items), Social Avoidance and Distress in new situations or peers who are not yet known (SAD-New consisting of 6 items), and Social Avoidance and Distress which is generally felt when being with peers (SAD-General consisting of 4 items). The score can be the sum of each subscale, or the total score of all items except the four neutral items. Thus, the score range is 1 - 40 for the FNE subscale, ranges from 1 - 30 for the SAD-New subscale, ranges from 1 - 20 for the SAD-General subscale, and 1 - 90 for the total score. The results of the validity and reliability testing of this measuring instrument show that the 18 social anxiety items are valid with validity coefficients ranging from .52 - .85, and the reliability coefficients of the three subscales are .87 (FNE), .84 (SAD-New), and .77 (SAD-General), (3) The Social Connectedness Scale Revised (SCS-R) developed by Lee and Robbins (1995) is a one-dimensional measurement with 20 items (consisting of 10 positive items and 10 negative items). The answers are available in 5 (five) Likert scale options, namely 'Strongly Agree', 'Agree', 'Neutral', 'Disagree', and 'Disagree.' Negative items are given a reverse score and added together with positive items to obtain an overall score. The results of the EFA test for validity and reliability found that there was one invalid item, leaving 19 valid items, with a coefficient range between .47 - .81 and reliability of .92. Example of an item "I feel like I don't have a relationship with most of the people around

me." (4) General Belongingness Scale (Malone et al., 2012). This measurement scale contains 12 self-report items consisting of two factors, namely acceptance/inclusion (A/I) and rejection/exclusion (R/E). Each item is given a five-point Likert scale rating with the options 'Strongly Agree', 'Agree', 'Neutral', 'Disagree', and 'Disagree.' The results of validity and reliability testing show that all items are valid with correlation coefficients between .51 - .83, overall reliability of .855 and reliability of .78 (A/I) and .82 (R/E). An example of an A/I item is "I have close ties with family and friends" and an example of an R/E item is "If I am with other people, I feel like a stranger."

Results and Discussion

The research results begin with a series of tests to meet the requirements of regression analysis. Multicollinearity testing is shown below:

Table 1. Results of multicollinearity testing

Independent variable	Tolerance	VIF
Social anxiety	.60*	1.67**
General belongingness	.29*	3.45**
Social connectedness	.29*	3.41**

*There is no multicollinearity (tolerance >0.01)

**There is no multicollinearity (VIF <10)

Based on the results of the classical assumption test (Table 1), it is known that there is no multicollinearity (tolerance >.01 and VIF <10), so that the data can be continued to carry out regression analysis.

Table 2. Descriptive Data

Variables/dimensions	Average	Standard deviation	Minimum value	Maximum value	Median
Cyberbullying	24.69	8.20	14.00	57.00	22.0
Social anxiety scale for adolescents	55.11	12.99	18.00	85.00	55.00
Fear of negative evaluation	25.81	5.38	8.00	40.00	26.00
SAD-New	19.50	3.42	6.00	30.00	20.00
SAD-General	9.80	6.57	4.00	19.00	10.00
General belongingness	42.26	7.23	20.00	60.00	42.00
A/I	21.54	3.54	11.00	30.00	22.00
R/E	20.71	4.76	6.00	30.00	21.00
Social connectedness	63.16	12.33	30.00	95.00	63.00

Based on Table 2, it can be seen that the average (*mean*) of the measured variables has a value that is relatively around the median. This shows that in general the data is symmetrically distributed, meaning that the data is evenly distributed around *the mean* and median.

Table 3. Testing the Influence Between Variables

Model	Constants	Social anxiety	General belongingness	Social connectedness	Gender	Age
Model 1	18.58**	.11**				
Model 2	32.99**		-.20**			
Model 3	29.32**			-.07*		
Model 4	24.02**	.09*	-.25*	.10		

Model 5	22.61**	.09*	-.25*	.10	.58	
Model 6	26.01	.09*	-.24*	.10	.64	-.25

* significant at 5% error rate

** significant at 1% error rate

Table 3 shows that partially *social anxiety*, *general belongingness*, and *social connectedness* have an influence on *cyberbullying* of .11**, -.20**, and -.07* respectively. However, when tested simultaneously, *social connectedness* does not show its influence on *cyberbullying*, possibly merging or being covered by the strength of the influence of *social anxiety* and *general belongingness*. The *general belongingness* and *social connectedness* variables that show a negative direction indicate that *cyberbullying* will occur if both are at a low level. Demographic factors, namely gender and age, do not show an influence on *cyberbullying*, which means that men and women have an equal chance of being active in *cyberbullying activities*. Likewise, *cyberbullying activities* can be carried out by students of varying ages because they do not show a tendency towards a certain age.

Table 4. Classification of *cyberbullying* using *artificial intelligence*

Class	Interval	Frequency & Percentage
Strongly Cyberbullying (SC)	284.8 - 312	47 (12.1%)
Active Cyberbullying (AC)	257.6 - 284.8	144 (38.2%)
Moderate Cyberbullying (MC)	230.4 - 257.6	142 (37.7%)
Low Cyberbullying (LC)	203.2 - 230.4	40
Not Cyberbullying (NC)	176 - 203.2	4 (1.1%)

Table 4 shows that participants are generally in the *active* and *moderate cyberbullying classification*, which means that Generation Z's activities in *cyberbullying* are real. This fact is further strengthened by the fact that there are almost no participants who are not involved in *cyberbullying*.

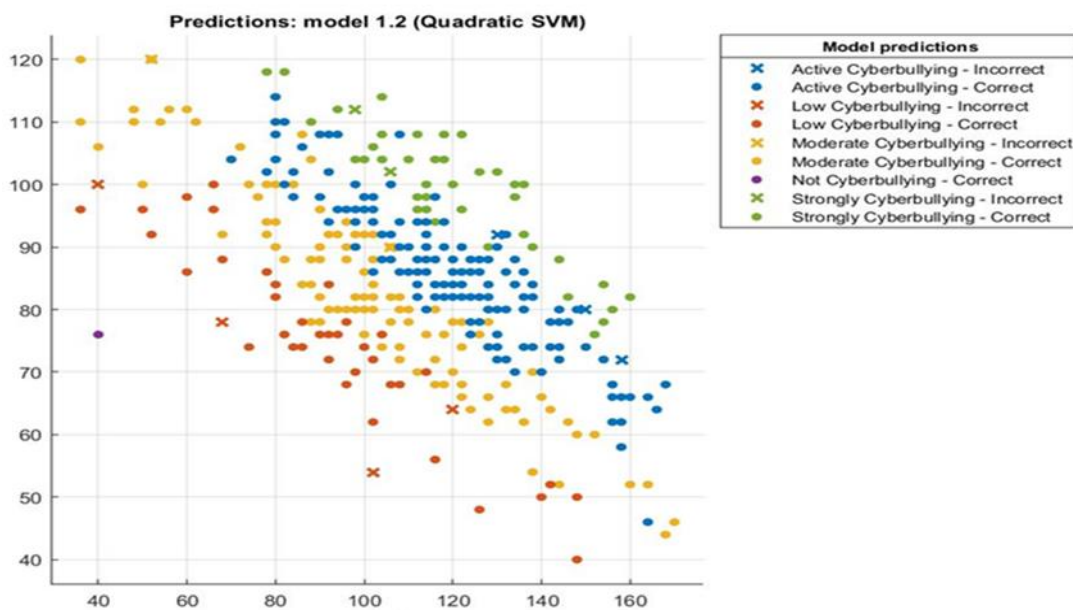


Figure 1. *cyberbullying classification data with scatter plot.*

Figure 1 is a visualization of Table 4 in the form of a diagram. The blue and yellow *Scatter plot visualization* shows the classification of *active bullying* and *moderate bullying* as the two most common bullying conditions felt by participants.

The phenomenon of *cyberbullying* that has hit many regions in the world (Bottino et al., 2015) is generally found in school environments. *Cyberbullying* that utilizes electronic media as a medium can harm the people who are targeted, because it is full of insults, intimidation, and creates a sense of helplessness. The findings of this study support the results of previous studies that *cyberbullying* does indeed occur in everyday life, and it is undeniable that it is a widespread phenomenon among Generation Z students who have a very high level of familiarity with the internet. Surfing social media with an internet background has become a necessity that is difficult to avoid for this generation in fulfilling daily activities, from playing *games*, being active on social media, to learning activities. In addition to positive goals, the internet can invite Generation Z to engage in negative activities, such as *cyberbullying*. This study classifies *cyberbullying* based on the data collected, and the results show that Generation Z students have involvement in *cyberbullying activities* ranging from very strong to not involved at all. The most classification is in the *active cyberbullying category* followed by *moderate cyberbullying* (Table 4 and Figure 1). This finding suggests that *cyberbullying* does occur among Generation Z teenagers.

Both classifications of cyberbullying, namely active and moderate categories, show that they are partially predicted by *social anxiety*, *general belongingness*, and *social connectedness*, but simultaneously the strength of *social connectedness* is covered by two other predictors. Among the three *cyberbullying predictors* as mentioned, the one that plays the biggest role is *general belongingness*, while simultaneously the role of *social connectedness* is not apparent because there is a possibility of merging into *general belongingness*.

Online bullying incidents tend to choose victims with individual characteristics with high levels of social anxiety so that they cannot defend and defend themselves when faced with attacks from the social environment (Navarro et al. 2015). Even though *cyberbullying* occurs by utilizing networks and technological devices, the process remains in the context of social relations. The school environment is a context that is often used as a place for bullying, both in traditional forms and *cyberbullying*.

Teenagers are very sensitive to peer acceptance and recognition (Santrock, 2016), so the reality of being rejected and isolated by peers makes teenagers experience an increase in vulnerability to *cyberbullying*. Data findings using *artificial intelligence* show that among generation Z teenagers, *cyberbullying phenomena actually occur* in the classification of *active cyberbullying* and *moderate cyberbullying*, only 1.1% stated *not cyberbullying* (Table 4 and Figure 1). Social media that can actually be used for positive purposes such as meeting and socializing with people you just met, maintaining existing relationships, and several other educational and informal purposes (Horzum, 2016), but still have conflicting risks and should be watched out for, namely that they can develop problems with online behavior so that they have a negative impact on teenage students (Kuss, D et al., 2014). Becoming a perpetrator of *cyberbullying* and using social media problematically are two forms of behavior that have potential risks.

Teenagers with anxious and socially withdrawn traits, provide their own vulnerability risk to become targets of *cyberbullying*, because teenagers with these characteristics tend not to have the strength to fight or defend themselves from intimidating actions of their peers. Anxious and socially withdrawn traits are nothing but manifestations of social anxiety, low *social connectedness*, and low *general belongingness* as shown in the findings of this study (Table 3).

Previous research results show that someone with high social anxiety will increase their chances of becoming a victim of *cyberbullying*. (María C. Martínez-Monteagudo 1, 2020) because people with high social anxiety tend to have limited skills in building face-to-face social relationships. As a result, these people will build social interactions and form new friendships through the internet with people they have never met, and therefore will be more often victims in cyberspace (Navarro, R et al, 2015). However, on the other hand, it was found that *cyberbullying perpetrators* will choose victims from groups of people with high levels of social anxiety because it is almost certain that people with high social anxiety will be less able to defend themselves when facing and receiving *online bullying*. (Navarro et al, 2015). Through a two-way cycle, namely individuals with high social anxiety repeatedly experience *cyberbullying* so that social anxiety which is already at a high level will increase even higher. (María C. Martínez-Monteagudo 1, 2020).

Teenagers actively take various actions to gain connection with the people around them. If the effort to seek and find this *connectedness* is supported, then *connectedness* will affect the individual's mental health which will later positively determine the future (Wu et al., 2016). Along with social anxiety, *social connectedness* which refers to the ability to build meaningful relationships that allow someone to see themselves as part of social interaction processes. According to previous research results, both perpetrators and victims of *cyberbullying* are at risk of increasing *psychological maladjustment* (Lucas-Molina et al., 2022).

Another protective factor, namely *general belongingness*, which in this study was the strongest protective factor against the possibility of facing *cyberbullying*, is actually rooted in... *self-esteem* which is an important and valuable factor in the lives of adolescents. Adolescents with low *self-esteem* will be a risk factor for various important domain outcomes in individual life (Demirtas et al., 2017). The results of the study Demirtaş et al., (2017) also showed that *general belongingness* is a predictor of *self-esteem*. In line with the findings of this study, *general belongingness* shows a state that is not different from social anxiety and *social connectedness*. In other studies, *general belongingness* was found to have a relationship with subjective happiness (Satici & Gocet Tekin, 2016), intrinsic life purpose (Oğluz-Duran & Yilmaz-Sayar, 2016), life satisfaction (Satici & Gocet Tekin, 2016).

As Afroz S & Tiwari P.S.N (2015) stated that the urge to belong will be part of a person's efforts to build relationships and care for others, feel the presence of others as a state that is truly present in him, and feel satisfaction from the involvement of himself with the social environment in general. The need for *belonging* can only be met and fulfilled by a form of interpersonal bond that is stable, effectively oriented, and sustainable into the future.

The findings of this study indicate that *gender* does not play a role in *cyberbullying* (Table 3, Model 5). This means that this finding is still in line with the findings of previous studies that *gender issues* have not shown a stable influence (Al Qudah et al., 2020). As the results of previous studies, for example, (Heiman et al., 2015) found that women are more often victims of *cyber* than men. Conversely, men are more often involved as *cyber perpetrators* than women (Barlett & Coyne, 2015; Lee, 2017), while no Ryan (2014) *gender* differences were found in *cyberbullying*. Likewise, age does not show a significant influence on *cyberbullying*, which means that perpetrators, victims, and perpetrators and victims can come from heterogeneous age groups as long as they are still school students.

Conclusion

Active and *moderate* categories *Bullying* is a real phenomenon that occurs among Generation Z teenagers, especially in the school environment, either as perpetrators, victims, or both. Research findings show that *cyberbullying* is motivated by psychosocial factors, namely social

anxiety with a positive direction, while *general belongingness* and *social connectedness* show a negative direction. High social anxiety will lead Generation Z to build friendships through social media so that it does not require them to communicate directly. This situation is also influenced by low *general belongingness and social connectedness*. Following up on these findings, anticipatory steps are needed to facilitate students with activities that facilitate the development of their mental health, for example by pursuing constructive extracurricular activities.

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