

Cyberbullying Challenges on Society: A Review

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Abstract-

This paper discusses the challenges of cyberbullying on society. Research shows that almost 43% of children have been bullied through the web. 1 in 4 children has had it happen more than once. This shows that cyberbullying is rampant in our society and more and more young adults are affected by its catastrophic effects. There are many varying methods in which cyberbullies reach their victims, such as instant messaging over the Internet, social networking web sites, text messaging and through calls made to smart phones. Similar to bullying, cyberbullying is a solemn issue which can make the victim feel uneasy and overly self-sensitive. This can eventually, result to the possibility of committing suicide due to being cyberbullied. A survey was undertaken to determine and understand the challenges faced by victims of cyberbullies. It is found that cyberbullying indeed increased the risk of self-harm and suicidal thoughts among young adults.

Keywords- cyberbullying, challenges, society, depression, young adults

I. Introduction

In the 21st century, as community have change into more used to using the internet in daily life, hence the integrity as well as fastness of the internet was taken for granted. However, while we were pleased when stretching the net, skimming through social media applications, we may have observed an advancing ordinary happening which is cyberbullying. Cyberbullying is usually any class of bullying that occurs through digital devices together with the internet where community can see, remark and share. Cyberbullying often happen through any social media that contain online interactions. When an individual is accused verbally on the internet, the nature of cyberbullying will surface and infect the others. People merely giving an opinion on something through commenting on an issue may end up with replies full of cyberbullying, however the replier may not even know about the misdeed done and he/she is unconscious about it. On public forums and platforms which can be viewed by anyone, the effect of cyberbullying increases. Worse come to worst, cyberbullying may end up turning into an intervention of the law. The consequences of cyberbullying to its

victim may be psychological warfare and may even advance post-traumatic stress disorder. In particular terminal cases, victim of strict cyberbullying have attempted to commit suicide.

Most of the children who are being cyberbullied would not tell a teacher or parents. They feel compunctious of the social stigma and afraid that they will be onset if they tell others the truth. Signs of cyberbullying include:

- During or after using the cell phone, they become emotional.
- Being very sneaky or protective of one's digital life [11].
- Keeping away from family members, friends and all activities to avert any school or group gatherings.
- Mood, attitude, sleep or appetite would change.
- They want to inhibit using the computer or cell phone.
- When gaining an instant message, text or email, they feel nervous or jumpy to prevent

any discussions about computer or cell phone activities.

II. Literature

The word "bullying" can be dated back to the 1530s [3]. In the case of bullying normally included two people which is an intimidator and a victim. A bullying consider occurs when there is someone intentionally used some words or some actions over and over again that cause someone distress in their life. Bullying are normally done by someone who is more power to the one who weaker or less power [4].

Due to the affordable of personal computers, we can see the traditional bullying is started happened in the web begin from 1990. As the technology developed, bullying has spread. With the existence of the Internet, chat rooms soon appeared. In this situation, no matter it is in public chat room or in a private messaging chat room, an adult or even strangers can be a subject that tend to be bully by children and teens. Nowadays, everyone can unscrupulously conduct cyberbullying due to the web's cryptonym provided a perfect protection for web user. The bully would not have much repercussion after bullying someone online.

States started to pass anti-bullying laws after a shooting incident happened at the Columbine School in 1999. A part from these laws criminalize cyberbullying, however many laws do not. Cyber cyberbullying became mainstream after online harassment caused many teenagers to commit suicide. In 2007, Tina Meier committed suicide because of her neighbor harass her with a fake account under the name of 'Josh Evans' [5].

When smartphones became the latest must-have products, cyberbullying made great strides in the mid-2000s. Anyone who has a smartphone can forward or share any photos or text message to anyone they one or even post it on social media. Jessica, who was aged 18, committed suicide after her nude photo being share by her boyfriend to the students in at least seven Ohio high school. She then was being cyberbullying by stranger through social media which is Myspace by text message. There is also a nearly similar case happened a year later. A 13-years-old girl killed herself after her nude photos were shared by her boyfriend of to

different people from almost six high school in Florida. In this both cases cause a death result due to the cyberbullying.

In the near future, we can found that there is a lot of cyberbullying occurred in many difference types of social media platforms and applications. A 15-second Instagram story can be shared on Twitter, Facebook and WeChat and Weibo within a few hours. Sometimes the post can be also shared on YouTube which is a channel where everyone in this world can view the post and comment on the post. This can cause the victim of the cyberbullying be a target for millions of people just in a very short times.

In 2010, a boy named Tyler Clementi committed suicide by jumped down from George Washington bridges. The reason why he jumped off from the bridge is because of a video share on the Twitter which is capture by his roommate about Tyler Clementi kissing a guy. The Federal Cyberbullying Act was passed in 2012 and named after him.

In the 2010 also, a similar case happened in Canada. Amanda Todd committed suicide a month after she uploaded a video on YouTube entitled 'My story: Struggling, bullying, suicide, self-harm'. In that video, she said about how she being persuaded by a trespasser to show her breasts on camera. The stranger keep the picture and used in on a fake account as her name. Canada started enacting legislation for national anti-bullying legislation after a week she dead.

III. Methodology

Cyberbullying is on the rise in our daily life along with the increase as well as availability of technology at our fingertips [6]. For this study, we have done an online survey research by assigning our questionnaire to a small sample of students who is studying in a private institution. Students were asked questions about experiences with cyberbullying which occurs frequently either in society or life. Overall, we obtained 38 respond from UCSI students which aged from 16 to 25 years old, they are the most who use the social media sites for example Instagram, Facebook and so on.

From our research, we can see that Instagram and Facebook are the social media sites which people use the most and they are the social media which always posted the post that related to cyberbullying. Exceed half from the sample students has been bullied online with some elegant words or videos. We have focused the research on appearance, school performance, weight, racism and sexism. What we will get from the research is the impact of cyberbullying in society.

With any imperfect social study, we should use alert when constructing the result. However, we can use the large sample size so that it can help to lessen the potential negative effects of outliers. Moreover, to guarantee effective responses within the survey, procedures should be taken. For example, we required the respondents to report their age and gender at two varied points in the survey before answering the questions, so that we can get an effective result from the survey.

IV. Analysis & Results

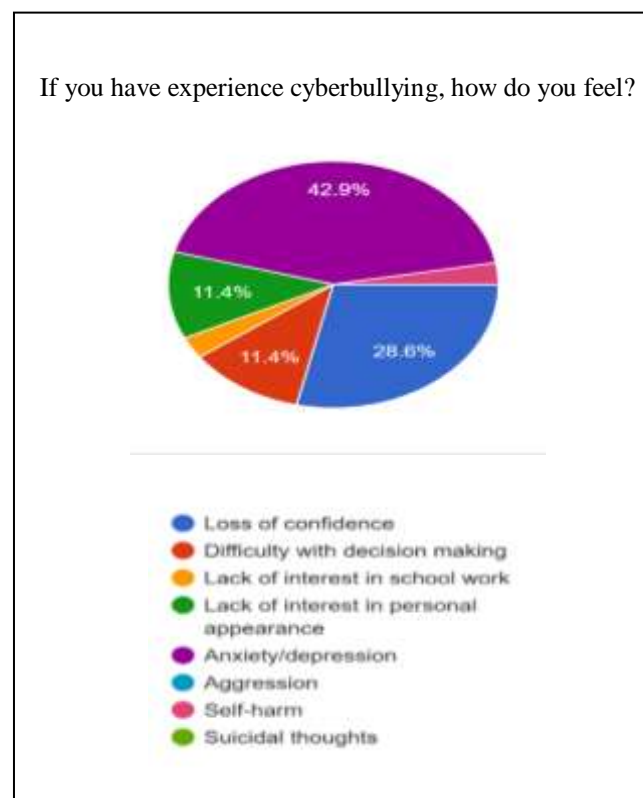


Fig 1. Findings on how society feel after being cyberbullied

Our 2019 pie chart survey involved a small sample of students from UCSI and also young adults that allows us to extrapolate how society feel after being cyberbullied. We surveyed a total of 35 people age ranged from 16 to 25. As we can see from the pie chart, the main impacts of cyberbullying are loss of confidence 28.6%, difficulty with decision making 11.4%, lack of interest in school work, lack of interest in personal appearance 11.4%, anxiety/depression 42.9%, aggression, self-harm and suicidal thoughts. The highest impact of cyberbullying

being anxiety/depression 42.9%, with aggression and suicidal thoughts being the lowest. Depression is a sickness that is not entirely understood by many people, and may have different causes, but it is obvious that it is connected to bullying. Both bullies and their prey tend to stand from depression comparing to youngster who are not implicated in bullying. This relationship can last for a period of time; people who are being bullied such as children are more likely to suffer from depression as an

adult than children not implicated in bullying [7].

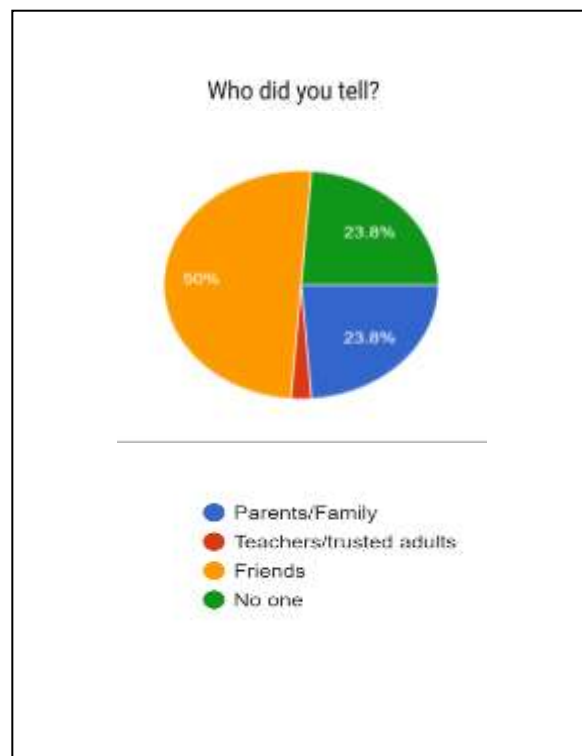


Fig 2. Findings on who did the society tell when experienced cyberbullying

From the pie chart above, the person who are being cyberbullied tends to tell their friends the truth has the highest percentage which is 50%. However, teacher or trusted teachers are the person who rarely tell and only represents 2.4% of the responders. There are 2 categories have the same percentage and represents 23.8% which are parents or family members and no one. The reason why the victims tends to find their friends instead of family members because they don't dare to tell their family about the truth. Friends are like the second closest people in their life. As a friend, they are more likely to know about the situation that was faced by the victim. Sometimes, friends give them advices and supports. As we know, parents are the closest people in our life and brought us up. On the contrary, we can see

obviously that the percentage of parents is quite low. We can conclude that the victims may not tell anything to their parents although they stay together every day. The reason that the victims would not tell their parents the truth is they think their parents might be overreacted. They are confirm their parents will make out something to let the situation worse like making phone call to the school or the other parents [8]. Apart from that, they worry their phone will be confiscated if they tell parents they are being cyberbullied. Sometimes, parents are busy with their works till ignore their children what they are saying. Then, the victims may be threatened by the cyberbullies that they will get in trouble if they tell their parents.

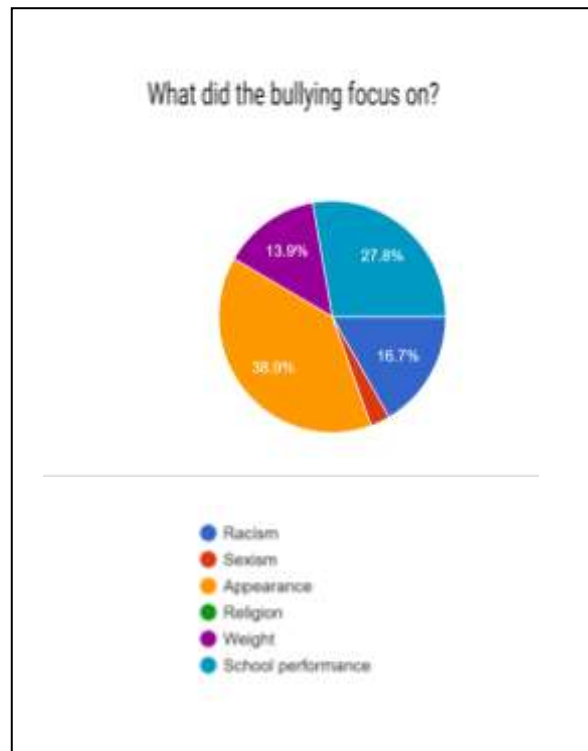


Fig 3. Findings on the main target of cyberbullying

This pie chart illustrates the various target of cyberbullying which consist of racism, sexism, appearance, religion, weight as well as performance. According to the pie chart above, the largest percentage goes to appearance which consist of 38.9%, followed by school performance 27.8%, racism 16.7%, weight 13.9% and the least would go to sexism 2.8%. Girls often receive comments about being overweight, while among boys, it was common to receive comments about looking or seeming "gay." A great cause for enchanting in appearance-related cyberbullying was to realize higher social status in the lord group. The girls and boys responded vary to appearance-related

cyberbullying. Boys trend to act out or take no offence, while girls experienced lower self-esteem and feelings of depression. [9]. In conclusion, we can see that the reason bullies target on the appearance of their victims was to feel more superior and have a higher social status among their peer group.

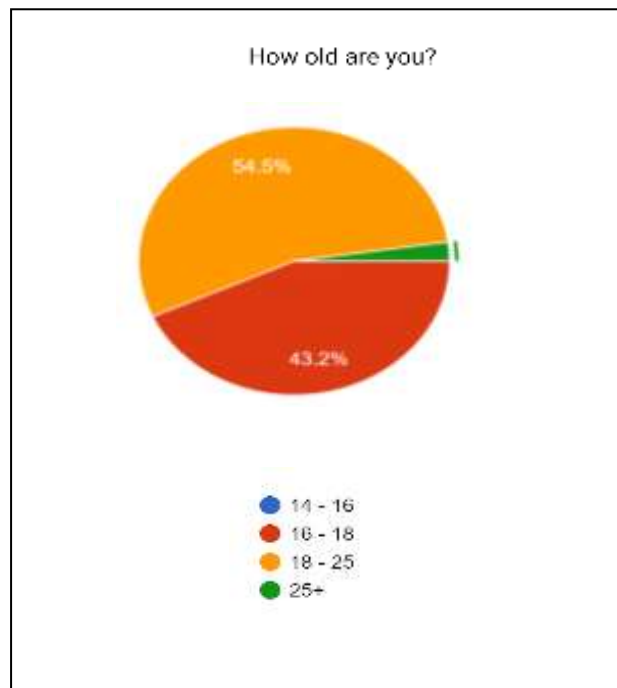


Fig 4. Findings of the age of the society who had experienced cyberbullying

This pie chart demonstrates the various age group of people who had experienced cyberbullying at least once in their lives. The age group from 18-25 took up 54.5% of the pie chart which is the majority while the age group from 16-18 took up 43.2% of the pie chart. It is obvious that 18-25 age range are the ones that experienced cyberbullying the most. As students age they are verbally and physically bullied less but cyberbullied more, people with english language not as their first language are not bullied more than native English speakers and bullying increases as students' move from elementary to middle school [10]. Considering that it is the oldest age range who get cyberbullied the most often, school personnel should focus their intervention resources on students that age range. Intervention should educate social-emotional learning skills to students and suitable ways to navigate new peer groups and social hierarchies.

V. Discussion

A. Challenges on individual

When cyberbullying happens on an individual's individual accounts or happens at home, it is major to report the issue. Copies of the cyberbullying must be forwarded to your

respective ISP (Internet Service Provider). If the bullying took place on a social networking site, it must be reported as well. Portents of death, portents of physical violence or evidences of seeking reactions are against the law. A police report should be made if any trouble continues over a lengthened period of time as well as any accordance that involves trouble based on race, religion or disability.

Bullying, no matter cyberbullying or traditional bullying can cause important emotional and psychological trouble to oneself. In reality, just like any other victims of bullying, cyberbullied victims may undergo desire, avidity, low self-respect and depression. They might also have to handle physical symptoms and tussle to perform in their daily tasks. However, some unique consequences and negative feelings will also be experienced by targets of cyberbullying in every single day.

Individuals that are being targeted by cyberbullies will have a feeling of vulnerable and powerless, as such that they will feel insecure and think that bullying is everywhere. This is due to cyberbullying can intrude their house by a computer or mobile phone at any second of a day. In addition, the cyberbullies can remain anonymous online, therefore escalating feelings of fear to the victims. When

cyberbullying break out, the disturbing messages, texts or posts can be shared with mass of people. The transparent amount of people that know about the bullying can head to rigorous sense of humiliation of the victim.

Besides, cyberbullying often invades victims when they are at an unprotected stage. As a consequence, point of cyberbullying often start to dispute their worth and value. They may make response to these sense by self-harming with several methods, as example, wrist cutting or involve themselves in dangerous activities. Sometimes, cyberbullying-victim will gain bad-tempered about what is occurring on them. As time goes by, they will start plotting avenge and engage in reprisal. This can cause them to be very revengeful and start bullying others.

When cyberbullying is unremitting, victims usually connect to the world around them differently than others. Life is hopeless and meaningless to most of the victims of cyberbully. Hence, they will start losing interest in things they once enjoyed and spend lesser time interacting with family or friends. Victims of cyberbully will stay away from any social events by providing excuses and hide themselves alone. These can slowly lead to depression and thoughts of suicide, as they might have a feeling that the only mean to get away from the suffering is through suicide. In the end, they may imagine about ending their life to run away from their tormentors.

On a contrary, cyberbullying is a huge matter that should not be managed alone. Victims must be sure to enclose themselves with supportive friends and family. Innermost thoughts and feelings can either be shared by talking to someone trustful or be written down in a diary. This can greatly prevent negative feelings from bottling up, which can lead to depression or suicidal thoughts in oneself. Friends or family members of a cyberbullied victim should also encourage them to speak up and give them company, so that victims of cyberbullying will feel secure. If they do not have enough courage to speak up, family members should encourage them to write a letter, avoiding them from having the wrong conception towards life.

B. Challenges on family

Victims of cyberbullying are not the only ones affected. In fact, the target's family members also are encountered. Parents may be worried about their kids being bullied in the school. Instead, kids can be bullied during school time, after school or even in their own bedroom. Now we are living in the age of science and technology, with smartphones, computers, tablets, and cell phones, bullies are able to involve in a child's life and affect every aspect of it. These are called cyberbullying. Cyberbullying is no longer a simple problem of standing up to the bully and having a face-off. It's no longer a simple matter. Instead, child who is being cyberbullied are less concerned by their parents. A research from Canadian Journal of Public Health concluded that cyberbullied children had poorer relationships with their parents [12]. Similarly, other research from Children and Youth Services Review agree that children who had a poor relationship with their parents were more likely to be cyberbullied victims [13]. Cyberbullying can influence a kid's emotional and physical levels. This case will indirectly affect the parents too. At the emotional level, parents will feel powerlessness. Cyberbullying is a case that parents cannot do to control the situation. The cyberbully made a choice themselves to cyberbully someone. The parents can't make it stop although they keep reporting the case of cyberbullying. They feel they should be the one and responsible to make it stop but yet they can't. Hence, they feel so helpless and powerlessness. Next, the family members of the victims feel alone and isolated. Other parents and neighbours would not stand on their side once knew the child being bullied. This is because they don't want to get implicated. They would rather stay neutral about a cyberbullying situation than stand up for what is right [14]. Apart from that, most of the parents become obsessive about the situation. They can't stop worrying when their kid is being cyberbullied. They are also afraid that their child will commit suicide due to isolation by their friends. They will over think a lot of bad things until they cannot control. Their parenting style becomes oppressive and limiting. Most parents are always busy with their work until they ignore their children. They communicate less with their children. A poor quality of family communication, avoidant, not open, and with difficulties in general, is related to a greater probability of becoming a cyber-

victim. On the contrary, good communication works as a protective factor, reducing the risk of becoming a cyber-victim [15]. Parents can also go through the emotional symptoms such as anger, depression, confuse, and agitation. Family members often struggle with a feeling of failure when it comes to cyberbullying. They self-doubt their parenting abilities and question why they fail to protect their own child being cyberbullied. They also blame themselves that they missed the sign of cyberbullying.

C. Challenges on school

Based on the Ipsos survey in the year 2018, the highest percentage is classmates were the bullies [16]. Cyberbullying is the most common issue in society. Cyberbullying is an offensive through the network but not through physically. Unfortunately, students are one of the victims. The students who became the victimized, they will eventually feel the pain mentally and physically. Research has shown that students who become one of the victims of cyberbully have a lot of pressure [17]. Everyone would be wondering why are cyberbullying exist in this world. What is the main reason that occurs in cyberbullying among the students? One thing that people will do cyberbullying because of it can be done by anonymous. The people who are doing cyberbullying did not think of the consequences on those people whom they are cyberbullying on. Here are a few impacts that will affect the students who are been involved in cyberbullying. Firstly, they will have to deal with an illness called depression. Depression can lead to the idea of suicide if they are not open-minded on a certain issue. For children, they will refuse to attend classes and feel sadness. For youth, they will also have the same problem as well. For example, skip classes, sadness, self-harm and the most serious social issue is takes drugs and alcohol [18]. These are all the depression symptoms that will occur to the one who is facing cyberbully. Secondly, the students will drop out of the school due to they did not perform a well academic performance in school because of the affection of the cyberbullying. The victims of cyberbullies will often feel a lack of interest in studying. They find it difficult to concentrate on academics. In some special cases, the students will eventually stop to continuing their studies [19]. Third, they will isolate themselves with all the human being around them because

of the insecurities and anxious. In this century, mobile phones and computers are so-called friends for teens and children. When they do not have friends, they will as well go on their mobile phone and computer all day long [20]. This is the reason why most of the students are being targeted by cyberbullies. Fourth, the victims of cyberbullies will have violent tendency. They will get angry easily on what is happening around them [21]. For example, they will use aggressive behavior to take revenge on someone or their enemies.

D. Challenges on workplace

Technology has been advancing rapidly over the years that it has tremendously changed the way we work. It allows people to work remotely and has successfully connected colleagues from all around the world. However, there is a darker side to these new technological advancement as quite an amount of workers are misusing them lately in the workplace. The misuse of technological advancements has led to one of the severe issues worldwide, which is called cyberbullying.

Cyberbullying is always related with youngster and schools, but it is enhancing common in workplaces. Emma Kenny, psychologist and founder of well-being site Make Your Switch stated that cyberbullying usually involves a 'gang/pack mentality' in work places, whereby the victim was left sensing extremely disengaged. Adult cyberbullying in the workplace can be more tenuous, but it is equally distressing, though the outcomes are often the same, which is to disgrace an individual. Victims of bullying are often given advice to toughen up and just neglect the behavior. But with technology generating an always-on work culture, and smearing the limitations between personal and professional lives, cyberbullies have new methods to interfere their victim's life outside office hours [22].

A limit of various examples of bullying on work using electronic ways include offensive emails, email portents, offensive posts and comments on social networking sites, spreading lies and malicious gossips via messaging or chat. Social networking sites and blogs are usually the most common methods in which people become cyberbullied victims in this

form. Cyberbullying can happen via any electronic methods including text messages, phone calls as well as social media (such as Facebook and Twitter). Normally a person may not have experienced any direct form of cyberbullying, but instead the bullies are departing offensive or disturbing comments about them on blogs and social networking sites which can be seen publicly. The comments posted may be about the person's entertainment at work, or even be personal.

Although cyberbullying in a workplace may seem to be a situation where it is difficult to be handled, there are still various ways to keep the situation under control. A victim who faces cyberbullying should not give immediate response nor respond in anger no matter how much the words hurt. Instead, take a deep breath and collect your feelings, as the tip is not to react but to respond in a reasonable manner. Sometimes, victims could also choose to ignore and just focus on their respective tasks. However, if the situation requires an individual to respond, make sure that arguments and accusations are avoided as it may worsen the situation. If the cyberbullying is done by work colleagues, victims may report the case to the HR Department so that they are aware of what is going on in its company. Do give them copies of the screenshots too as an evidence of that particular bully, in case the posts are removed one day [23].

E. Challenges on social media

Cyberbullying is the act of bullying that takes place over electronic devices like smart phone, computer through text such as Email, Chatroom, WhatsApp, social networking site such as Facebook, Instagram & Twitter [24].

There are some signs for you to look out for if you are conscious that your children or close relatives or your friends might suffer from cyber bullying [25]:

The victims feel displeased with themselves. Cyberbullying usually attacks victims on places where they are most sensitive and lack of confidence. Therefore, targets of cyberbullying will often doubt their worth and value. For example, if someone teases the body size of the girl, she may start a strike diet with the persuasion that if she alters how she looks then the bullying will

end. Sometimes victims will try to change something else such as change their looks or attitude to get out of extra cyberbullying [26]. These may cause the victims to be lack of confidence. Then, they don't dare to post or share anything on social media to prevent additional cyberbullying.

Feeling alone and scheduled all the time. Teenagers will exclude themselves from a group of people. The experience is extremely torture because friends are crucial. When teens do not have friends, this can lead to boycotting or cyberbullying. Nowadays, for teens, their electronic devices are one of the most important ways to communicate with people.

The person who is being cyberbullied refuses to talk to others because they feel depressed. Physical health is most likely affected by cyberbullying. Victims of cyberbullying often develop characteristics such as anxiety, depression and low self-esteem. This occurs mainly because cyberbullying reduces their self-confidence and self-esteem.

Feeling self-destructive and self-harming most of the time. Cyberbullying may increase the risk of self-harming or suicide. They think that self-harming or suicide are the only way to escape the pain. For instance, we can observe some fresh scars on their skin that could show self-destruct. Sometimes, they may dress differently like wearing long sleeved clothes whole day and try to cover or hide any scars. Apart from that, this may also lead them to upload negative posts online to make others feel comfortable.

VI. Conclusion

In conclusion, the investigation has clarified that cyberbullying crime and fraud is a major prejudicial impact on teenagers' health. In fact, cyberbullying is a manufacturing society well-being, connected to solemn mental health follow with important impact on teenagers, anxiety, dejection, emotional distress, self-respect, and suicidal behavior from the studies reviewed. However, cyberbullying also connected to youngsters' physical well-being respects [27].

It is significant to notice that the plurality of knowledge researching the connection among

cyberbullying actions as well as youngster well-being have been relevant in nature. The significant step one to understand the consequence of cyberbullying is relevant knowledge. It is important to enhance our realizing on how cyberbullying experiences affect youngsters' well-being along with the time.

Encouragement from an adult especially parents towards kids as well as youngster that have fallen scapegoats to the dark pits of the internet is needed to overcome cyberbullying [28]. Since cyberbullying cannot really be prevented then the other efficient method to treat it is to shape youngster free from it. Youngster should be instilled how to inhibit from using them as a victim. The strong personality should be built in youngster.

References

- [1] Moessner, C. (2014). Cyberbullying, trends and tudes. *NCPC. org*. Accessed Feb 10 2014.
- [2] Knapton, S. (2018). Cyberbullying makes young people twice as likely to self harm or attempt suicide. *The Telegraph*.
- [3] Donegan, R. (2012). Bullying and cyberbullying: History, statistics, law, prevention and analysis. *The Elon Journal of Undergraduate Research in Communications*, 3(1), 33-42.
- [4] Kolandaisamy, R., Noor, R. M., Zaba, M. R., Ahmedy, I., & Kolandaisamy, I. (2019, July). Markov chain based ant colony approach for mitigating DDoS attacks using integrated vehicle mode analysis in VANET. In 2019 IEEE 1st International Conference on Energy, Systems and Information Processing (ICESIP) (pp. 1-5). IEEE.
- [5] Australian Human Rights Commission. (2013). Workplace bullying: Violence, harassment and bullying fact sheet.
- [6] Meter, D. J., Budziszewski, R., Phillips, A., & Beckert, T. E. (2021). A Qualitative Exploration of College Students' Perceptions of Cyberbullying. *TechTrends*, 1-9.
- [7] Desai, K. (2020). Cyberbullying: offline fear through online threat.
- [8] León-Pérez, J. M., Escartín, J., & Giorgi, G. (2021). The presence of workplace bullying and harassment worldwide. *Concepts, Approaches and Methods*, 55-86.
- [9] Gong, X., Sun, Q., & Cong, J. (2021, January). Study on Bullying Status of Rural Boarding Students on Campus—Taking X Middle School as an Example. In *2020 3rd International Seminar on Education Research and Social Science (ISERSS 2020)* (pp. 148-153). Atlantis Press.
- [10] Meter, D. J., Budziszewski, R., Phillips, A., & Beckert, T. E. (2021). A Qualitative Exploration of College Students' Perceptions of Cyberbullying. *TechTrends*, 1-9.
- [11] Balakrishnan, V. (2015). Cyberbullying among young adults in Malaysia: The roles of gender, age and Internet frequency. *Computers in Human Behavior*, 46, 149-157.
- [12] Alim, S. (2017). Cyberbullying in the world of teenagers and social media: A literature review.
- [13] Bjereld, Y., Daneback, K., & Petzold, M. (2017). Do bullied children have poor relationships with their parents and teachers? A cross-sectional study of Swedish children. *Children and youth services review*, 73, 347-351.
- [14] Mobin, A., Feng, C. X., & Neudorf, C. (2017). Cybervictimization among preadolescents in a community-based sample in Canada: Prevalence and predictors. *Canadian journal of public health*, 108(5), e475-e481.
- [15] Oksanen, A., Oksa, R., Savela, N., Kaakinen, M., & Ellonen, N. (2020). Cyberbullying victimization at work: Social media identity bubble approach. *Computers in human behavior*, 109, 106363.
- [16] López-Castro, L., & Priegue, D. (2019). Influence of family variables on cyberbullying perpetration and victimization: A systematic literature review. *Social Sciences*, 8(3), 98.
- [17] Statista. (2019). Malaysia: children experiencing cyber bullying by bully 2018 | Statistic. [online] Available at: <https://www.statista.com/statistics/937832/malaysia-children-experiencing-cyber->

- bullying-by-bully/ [Accessed 5 Feb. 2019].
- [18] Faryadi, Q. (2011). Cyber bullying and academic performance. *Online Submission*, 1(1), 23-30.
- [19] Smith, P. K., Mahdavi, J., Carvalho, M., & Tippett, N. (2006). An investigation into cyberbullying, its forms, awareness and impact, and the relationship between age and gender in cyberbullying.-causes/syc-20356007 [Accessed 3 Feb. 2018].
- [20] Barrington, K. (2016). How does bullying affect a student's academic performance. Retrieved from Public School Review website: <http://www.publicschoolreview.com/blog/how-doesbullying-affect-a-students-academic-performance>.
- [21] Hamm, M. P., Newton, A. S., Chisholm, A., Shulhan, J., Milne, A., Sundar, P., ... & Hartling, L. (2015). Prevalence and effect of cyberbullying on children and young people: A scoping review of social media studies. *JAMA pediatrics*, 169(8), 770-777.
- [22] Kolandaisamy, R., Noor, R. M., Kolandaisamy, I., Ahmedy, I., Kiah, M. L. M., Tamil, M. E. M., & Nandy, T. (2020). A stream position performance analysis model based on DDoS attack detection for cluster-based routing in VANET. *Journal of Ambient Intelligence and Humanized Computing*, 1-14.
- [23] Timothy J. Legg, Ph.D., PMHNP-BC (2019). Aggressive Behavior | Definition & Patient Education. [online] Healthline. Available at: <https://www.healthline.com/health/aggressive-behavior> [Accessed 7 Mar. 2016].
- [24] Olweus, D. (2012). Cyberbullying: An overrated phenomenon?. *European journal of developmental psychology*, 9(5), 520-538.
- [25] Hartzler, Hannah. "The Issue of Cyberbullying: A Literature Review." (2021).
- [26] Tian, L., Yan, Y., & Huebner, E. S. (2018). Effects of cyberbullying and cybervictimization on early adolescents' mental health: Differential mediating roles of perceived peer relationship stress. *Cyberpsychology, Behavior, and Social Networking*, 21(7), 429-436.
- [27] Sherri Gordon. (2019). The Effects of Cyberbullying. Retrieved from <https://www.verywellfamily.com/what-are-the-effects-of-cyberbullying-460558>
- [28] Lalande, D., Vallerand, R. J., Lafrenière, M. A. K., Verner-Filion, J., Laurent, F. A., Forest, J., & Paquet, Y. (2017). Obsessive passion: A compensatory response to unsatisfied needs. *Journal of personality*, 85(2), 163-178.
- [29] Milosevic, T. (2018). *Protecting children online?: Cyberbullying policies of social media companies*. The MIT Press.
- [30] Nixon, C. L. (2014). Current perspectives: the impact of cyberbullying on adolescent health. *Adolescent health, medicine and therapeutics*, 5, 143.
- [31] Kolandaisamy, R., Subaramaniam, K., & Jalil, A. B. (2021, March). A Study on Comprehensive Risk Level Analysis of IoT Attacks. In 2021 International Conference on Artificial Intelligence and Smart Systems (ICAIS) (pp. 1391-1396). IEEE.
- [32] Kolandaisamy, I., & Kolandaisamy, R. (2020). The Usage of Social Network to Students: Does It Improve Student's Education Quality During COVID-19 Outbreak. *Journal of Computational and Theoretical Nanoscience*, 17(12), 5224-5228.