Prevalence of Cyberbullying in Social Media and its Effect on Youth

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On my honor as a University Student, I have neither given nor received unauthorized aid on this
assignment as defined by the Honor Guidelines for Thesis-Related Assignments

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Introduction

As technology has advanced, so have the ways in which we interact with one another. Communicating online through social media platforms has become more common and normalized as an everyday occurrence, especially amongst young adults and even children. Screen use in adolescents continues to increase while some alarming statistics seem to follow the same trajectory, like the "rates of suicide among youth aged 10-24 increasing 56% from 2007 to 2017" (Nesi, 2020, p. 116). This statistic is not as alarming knowing that children have been introduced to the harmful side of social media at an early age, including cyberbullying and online harassment. In fact, studies have witnessed that such exposures to online violence have negative psychological effects on children (Patton et al., 2014). This parallelized trend between mental distress and the use of smartphones and social media by adolescents calls into question how the nature of social media interactions differs from in-person interactions. Why is social media activity harming youth mental health, and is it solely cyberbullying and online harassment that is causing this spike?

While this trend continues to grow, so does the call for a solution to mitigate these negative effects in youth mental health. While we would think to deem the parents responsible for teaching their children the appropriate way to use social media, there is actually a large disconnect between parents and their youth regarding social media, as parents "may lack a basic understanding of these new forms of socialization" that "are integral to their children's lives" (O'Keeffe & Clarke-Pearson, 2011, p. 801). This then prompts the question of, who is really responsible for the consequences related to social media use? Thus, I will be exploring how to mitigate and regulate cyberbullying and its adverse effects on youth from social media platforms by engaging with peer-reviewed papers. In this paper, I investigate the prevalence of

cyberbullying in social media, along with other actions that have the same lasting effects on victims. By examining the ways in which social media can impact an individual, I will highlight the difficulty to monitor social media for negative consequences in youth mental health and lend solutions to educate adolescents on the risks of social media.

Differences of In-person and Online Interactions

As social media has become a daily recreation for many young adults, there is much to be learned about how their interactions with each other online affect their mental well-being, and why these online interactions are able to cause damaging effects that are similar to the consequences from in-person bullying and harassment. It is important to first understand the ways social media interactions are transforming adolescent's social experiences. Nesi et al. (2018a) propose a theoretical framework called the transformative framework to understand the effects social media has on youth and their relationships. Nesi, Choukas-Bradley, and Prinstein (2018a) argue the significance of certain features of social media as factors in the changing relations among youth. Some important features they focus on include asynchronicity, permanence, publicness, availability, cue absence, quantifiability, and visualness (Nesi et al., 2018a). These features were selected because they have higher levels of intensity in social media compared to in-person interactions (refer to Table 1).

Features of social media	Definition	Related approaches described in prior literature
Asynchronicity	Time lapse between aspects of communication	Asynchronicity (Peter and Valkenburg 2013); "Cues-filtered-out" approaches (Culnan and Markus 1987); written communication (Berger 2013); transmission velocity, parallelism, rehearsability (Dennis et al. 2008); synchronicity (McFarland and Ployhart 2015)
Permanence	Permanent accessibility of content shared via social media	Persistence, searchability, replicability (boyd 2010); retrievability (Peter and Valkenburg 2013); verifi-ability, permanence (McFarland and Ployhart 2015); reprocessability (Dennis et al. 2008)
Publicness	Accessibility of information by large audiences	Invisible audiences (Boyd 2007); undirected communi-cation, larger audiences (Berger 2013); interdepend-ence (McFarland and Ployhart 2015)
Availability	Ease with which content can be accessed and shared, regardless of physical location	Accessibility (Peter and Valkenburg 2013); physicality, latency, accessibility (McFarland and Ployhart 2015); scalability (boyd 2010)
Cue Absence	Degree to which physical cues absent can range from including most in-person cues to being entirely anony-mous (no cues)	"Audiovisual" and "source" anonymity (Valkenburg and Peter 2011), Cue management (Peter and Valkenburg 2013); "Cues-filtered-out" approaches (Culnan and Markus 1987); reduced social presence, anonymity (Berger 2013); anonymity, disembodied users (Sub-rahmanyam and Šmahel 2011); anonymity (McFarland and Ployhart 2015); symbol sets (Dennis et al. 2008)
Quantifiability	Allowance for countable social metrics	Not previously proposed in prior frameworks
Visualness	Extent to which photographs and videos are emphasized	Not previously proposed in prior frameworks

Table 1: Social Media Features within Transformative Framework (Nesi et al., 2018, p. 275)

Social media gives users the ability to carefully craft messages and posts and converse with multiple people at once, which is defined within asynchronicity (Nesi et al., 2018a). In offline experiences, there is not always a gap in time where one can carefully choose what to say in conversation, while social media platforms give someone the opportunity for selective self-presentation within their message since they do not have to respond immediately (Nesi et al., 2018a). The permanence feature allows content on social media to be revisited, while offline interactions are usually temporary (Nesi et al., 2018a). With publicness, users can reach a larger audience that is not restricted from physical location, and availability gives users the ability to share content with this larger audience easily and quickly (Nesi et al., 2018a). Cue absence points out how social media allows for anonymity and decreases the number of social cues exchanged in an interaction (Nesi et al., 2018a). Critical in-person cues that are present in face-to-face interactions include gestures, tone, and facial expressions. Absence of these cues in

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online experiences can cause misinterpretation of messages. The quantifying nature of social media environments is also vastly different than offline environments. Social media uses numerical metrics that "adolescents are highly aware of and influenced by" (Nesi et al., 2018a, p. 277). These metrics include "likes", number of followers, retweets, shares, and much more. Being able to compare one's own metrics to another's metrics is not possible in an offline environment. Lastly, the transformative framework highlights the visualness feature of social media, where platforms give more emphasis on photographs. This causes someone to be more aware of their own physical appearance and their peers', resulting in more time spent with appearance-based social comparison (Nesi et al., 2018a). This framework outlines key distinctions in social media that reshapes how adolescents view experiences with their peers. Throughout this paper, I will use this framework to guide my findings about cyberbullying and other consequences of social media on youth mental health.

Who is at Risk from Negative Effects of Social Media

Social media platforms are a way for peers to stay connected with one another, but the consequences of social media seem to be dependent on the contextual usage of the social media site. While social media is supposed to help users feel interconnected, research suggests that "the degree to which social media helps shy young adults reduce loneliness and increase social connectedness depends on young adults' aims for social media use and the way they use it" (Bettman et al., 2021, p. 369). Is social media being used to avoid negative emotional states? Interfering with friend and family relationships? Causing feelings of the Fear Of Missing Out (FOMO)? How a young user utilizes social media will be an important factor when we consider the different actions that can cause negative consequences in mental health.

On top of the contextual use of social media, individual differences will make users react differently to social media use as well. For example, if someone has lower self-esteem, they may feel the negative effects of social media more because of the visualness of the platform, causing more social comparison tendencies (Abi-Jaoude et al., 2020). An individual's offline social life and relationships can also affect their online experience, since the physical and virtual world of an individual tend to be connected (Underwood & Ehrenreich, 2017). Studies have shown that "adolescents with positive offline social relationships may show social competence in their use of social media and receive a lot of peer affirmation in return, whereas those who are lonely or introverted or less well-regulated may experience more negative consequences of intense involvement" (Underwood & Ehrenreich, 2017, p. 151). This alludes to how individuals who are victimized in-person, are more likely to experience cyber victimization (Nesi et al., 2018a). In the next section, I will explore the ways in which perpetrators and victims are motivated and affected by social media's distinct features.

How Cyberbullying is Detrimental to Youth Mental Health

Bullying in general, whether in-person or online, is never a good experience for a victim. However, there are key distinctions in an online environment that intensifies cyberbullying in a way that is not possible in a traditional bullying environment. To begin with, perpetrators seem to be empowered by certain factors of social media including cue absence, availability, and asynchronicity. The anonymous nature of social media gives perpetrators more power and makes victims feel even more powerless. Surveys have discovered that students believe the anonymity of social media makes cyberbullying easier to participate in, "emboldening [perpetrators] beyond what they might do on a face-to-face basis" (Hoff & Mitchell, 2009, p. 657). In fact, "a large

study of over 28,000 adolescents found that 71% of participants reported being cyberbullied by an individual who had *not* also bullied them in-person," further suggesting how the nature of an online environment gives adolescents the courage to act in ways they may not have the courage to do face-to-face (Nesi et al., 2018b, p. 303). On top of this newfound courage, perpetrators are less concerned about being caught since detection is difficult if they can be anonymous. In a traditional setting, bullying could be seen or overheard by teachers in the school, but since teachers are unlikely to see cyberbullying occur first-hand, the likelihood for an online perpetrator to experience traditional consequences is not likely (Hoff & Mitchell, 2009). Thus, perpetrators can act more harshly without fear of a bigger consequence. Another stark difference between traditional bullying and cyberbullying is that in traditional bullying, the perpetrator can directly see how the victim is reacting to their actions, while cyberbullying has a lack of this immediate feedback. Without these "empathy-inducing cues from victims," perpetrators will not know the impact of their behavior right away, suggesting that "online disinhibition increases aggressive and threatening behavior" since no immediate consequences are presented to the perpetrator (Nesi et al., 2018b, p. 300). Thus, the nature of social media tends to create an environment for a higher number of perpetrators to act more harshly and without consequence.

Victims of cyberbullying and cyberaggression are also affected by the differences of an online bullying environment and in-person environment. For instance, victims are negatively impacted by the anonymous nature of social media. Hoff and Mitchell (2009) found that cyberbullying results in high levels of anger, powerlessness, sadness, fear, loss of confidence, disassociation from friends and school, and uneasiness in victims, with these effects being "heightened when the student had no idea who was doing the bullying" (Hoff & Mitchell, 2009, p. 659). The publicness factor also amplifies the effects of cyberbullying for victims. Since the

cyberbullying content can be widely spread, the audience can continually grow, making victims feel like more and more perpetrators are against them. Prior studies have found that these "public attacks may feel acutely harmful to adolescents, given the centrality of social status to their identity and self-worth" (Nesi et al, 2018b, p. 302).

In a traditional setting, the audience of a bullying act may just be a small group of students at school, while in an online environment the audience is not bounded by the physical location of the perpetrator and the victim. Thus, the availability of social media is also a critical difference that affects a victim. In a traditional bullying situation, a victim can go home and feel safer at home than at school where their perpetrators are lurking. On the other hand, the availability of social media means that adolescents "can never fully escape the potential for victimization" since perpetrators can act from anywhere, at any time, with just a click of a button (Nesi et al., 2018b, p. 298). Consequently, a victim can never fully feel out of danger from a bully, since a bully can act on their own time, making a victim feel even more vulnerable. Another considerable change from in-person bullying is that a single act of cyberaggression can impact an individual significantly. Underwood and Ehrenreich (2017) emphasize how the consequences of cyber aggression do not have to be from repetitive events of cyberbullying, but that even one instance is enough to cause traumatic effects on a victim. In traditional bullying, there may be lasting harm for a victim, "but the experience itself is often temporary" (Nesi et al., 2018b, p. 302). However, because of the permanence factor of social media, cyberbullying content exists forever and can be duplicated across multiple platforms, reaching a large audience (Nesi et al., 2018b). Thus, a victim can repetitively experience and never forget their cyberbullying incident since they, and others, can read and reread the content as many times as they wish to (Underwood & Ehrenreich., 2017). The fact that a single occurrence of cyber

aggression can result in the same distress as a repetitive bullying experience highlights how single actions in social media should be viewed as possible repetitive hardships for a user. In the next section, we will explore how other distinctions in social media can also harm youth mental health.

Other Factors Affecting Youth Mental Health from Social Media Use

Based on prior studies, there are many trivial behaviors developed from social media that can be construed as "bullying" in the eyes of a victim. To start, there are many consequences to a user's mental health caused by the quantifiable metrics of social media. For example, Sherman et al. (2016) point out how the simple act of liking a post can show endorsement to the user who posted the content. An individual can then interpret someone not liking their post as mean or hurtful. Studies have found that adolescents began to worry about their friends disliking them if their friends did not give them immediate feedback to their posts, amplifying friend expectations to always be available to like and comment posts to show support (Nesi et al., 2018a). Thus, no action on social media from peers can even cause an individual mental distress due to the expectations social media has created for relationships. Users can also spend time looking at their peers' number of followers, quantity of feedback on their posts, achievements they posted, and compare these metrics to their own. However, social media gives users the ability to select what parts of their lives they want to show, edit their photos, and usually only show the positive aspects of their lives. Thus, users are comparing all aspects to their lives to the selective self-presentation their peers posted. Recent research found that "seeing only positive views of others' lives can make "youth feel worse about their own lives, to the point of being depressed

(Underwood & Ehrenreich, 2017, p. 155). Overall, the quantifying metrics of social media make it easier for youth to seek reassurance from their peers and compare themselves to others.

Another common theme across multiple studies is that youth tend to have feelings of FOMO, the Fear Of Missing Out, when using social media platforms (Bettmann et al., 2020). In a recent study, 13-year-olds were asked "what is the worst thing that has ever happened to you on social media?" where they responded saying that they saw pictures posted on social media where they were excluded from parties/ friend hangouts (Underwood & Ehrenreich, 2017). While it seems like seeing others' posting on social media should not cause negative effects on users, the ability to see what you are not included in is harmful for youth. Cross-sectional surveys of American and German college students even suggested that there is a correlation between FOMO and Facebook usage, increasing the stress in students who use Facebook more regularly (Abi-Jaoude et al., 2020). With that, it was found that individuals with "high levels of FOMO are more likely to use social media immediately after waking and before going to sleep, as well as during meals" (Bettmann et al., 2020, p. 370). Underwood and Ehrenreich (2017) argue that increased levels of social media use is not beneficial for youth:

> Constantly reading a social media feed full of friends' highly groomed, sanitized, positive representations of their lives and social activities could pose risks for adolescents, due to the stress of constantly monitoring for signs of status and exclusion and the very real possibility of social comparison that could make vulnerable adolescents feel worse about their own lives. In a recent national survey in the United States, 53% of adolescents reported having seen social media posts about social events involving friends to which they had not been invited, and 21% acknowledged feeling worse about themselves because of what they had seen friends post on social media. (p. 150)

Thus, the presence of FOMO in adolescents is important when considering how social media may be affecting their mental health.

It is evident that there are unforeseen effects from social media including excessing reassurance-seeking, social comparison, and FOMO that are linked to depressive symptoms (Nesi et al., 2018a). If an adolescent is engaging in such behaviors, they may be in danger to experiencing negative effects to the mental health.

Discussion of Remedies and Mitigation Solutions

Some mitigation techniques are already being implemented by social media platforms, but are these techniques enough to mitigate the negative effects on mental health caused by cyberbullying and singular actions? For example, some platforms like Facebook and Instagram have "implemented screening and intervention procedures when users exhibit signs of emotional distress or suicide risk" (Nesi, 2020, p. 119-120). Sites also allow a user to report comments or posts as well, but the platform must approve that the comment or posts are breaking guidelines before it can be taken down. As described in previous sections, there are less direct ways social media can also cause negative effects, including looking at a peer's post that a victim could not be included in, number of likes and comments, or an absence of likes and comments from friends. Thus, a platform could be trying to detect something that is not related to a victim at all, or not even present to detect. With this in mind, how much can social media platforms truly regulate? Because of possible unintentional damaging behavior that may be going on, there seems to be little more that the engineers who developed the platform can do to minimize the negative effects on an individual's mental health. One area that platforms can consider, and have started to consider, is removing some of the quantifiable metrics. For example, Instagram has

given users the option to hide the number of likes of posts. However, it is entirely up to the individual user whether to hide a metric. If a user is not aware that this could be causing them extraneous distress, the individual would not know to hide the metric. Thus, it is important to educate youth on how social media may affect them, so they know when to take a step away from these indirect effects social media features cause.

The responsibility for mitigating cyberbullying and negative effects of social media can then turn to parents, school officials, and other children specialists. Adolescents would have to open up to the adult figures in their life and listen to any advice given. However, Hoff and Mitchell (2009) also found that students are reluctant to go to school officials or their parents about cyberbullying because of fear, embarrassment, and the stigma that the officials do not care or will not help. This reluctance highlights how there is a gap between adults and students when it comes to social media and understanding the full effects of it. Parents and adults should try to become more familiar with the platforms to bridge this gap as much as possible.

While giving parents the opportunity to help educate their children on the risks of social media would be beneficial, not all adolescents have a nurturing home environment that will allow for this exposure. Therefore, another way to help educate adolescents about the risks of social media, is through social media itself. Recent studies found "that children and adolescents who reported that they were lonely (compared to those who were not) were significantly more likely to report using the Internet to communicate about personal or intimate topics" (Clerkin et al., 2013, p. 525). Since social media is made for connecting people with each other, support groups can also form for those who have been through similar experiences as well (Mitchell & Ybarra, 2007). The availability and publicness of social media can be used to reach out to youth, even to hard-to-reach populations (Nesi, 2020). While more research needs to be done on the

effectiveness of educating through social media, this solution has the potential to succeed in reaching youth, regardless of their at-home family situation.

Conclusion

Throughout this paper, I emphasize the differences between in-person and cyber experiences, highlighting the mental health risks that adolescents may encounter when facing cyberbullying and cyberaggression on social media. I utilize the transformative framework proposed by Nesi et al. (2018a) to further explain how other singular acts on social media can also have negative effects on users' mental health. By acknowledging that these singular acts are also important to educate youth about, I suggest that reaching youth on social media platforms would be the most beneficial way to ensure that all adolescents that are utilizing social media can learn about its risks. While giving responsibility to the platforms, parents, and school officials of the adolescents may seem likely, "hurtful online social experiences such as social exclusion may be so subtle that they are difficult to detect, even for parents who are vigilant and care deeply about adolescents' social lives" (Underwood & Ehrenreich, 2017, p. 154). Thus, I can conclude that monitoring social media and its negative effects is highly difficult and suggest that we educate youth about these risks through social media platforms.

References

Abi-Jaoude, E., Naylor, K. T., & Pignatiello, A. (2020). Smartphones, social media use and youth mental health. *Cmaj*, *192*(6), E136-E141.

Bettmann, J. E., Anstadt, G., Casselman, B., & Ganesh, K. (2021). Young adult depression and anxiety linked to social media use: Assessment and treatment. *Clinical Social Work Journal*, *49*(3), 368-379.

Clerkin, E. M., Smith, A. R., & Hames, J. L. (2013). The interpersonal effects of Facebook reassurance seeking. *Journal of affective disorders*, *151*(2), 525-530.

Davila J, Hershenberg R, Feinstein BA, Gorman K, Bhatia V, & Starr LR (2012, April 1). Frequency and Quality of Social Networking Among Young Adults: Associations With Depressive Symptoms, Rumination, and Corumination. Psychology of Popular Media Culture, 1(2), 72 - 71. Retrieved from https://doi.org/10.1037/a0027512

Hoff, D. L., & Mitchell, S. N. (2009). Cyberbullying: Causes, effects, and remedies. *Journal of Educational Administration*.

Mitchell, K. J., & Ybarra, M. L. (2007). Online behavior of youth who engage in self-harm provides clues for preventive intervention. *Preventive Medicine, 45*(5), 392-396. https://doi.org/10.1016/j.ypmed.2007.05.008

Nesi, J. (2020). The impact of social media on youth mental health: challenges and opportunities. *North Carolina medical journal*, *81*(2), 116-121.

Nesi, J., Choukas-Bradley, S., & Prinstein, M. J. (2018). Transformation of Adolescent Peer Relations in the Social Media Context: Part 1—A Theoretical Framework and Application to Dyadic Peer Relationships. *Clinical Child and Family Psychology Review*, *21*, 267-294.

Nesi, J., Choukas-Bradley, S., & Prinstein, M. J. (2018). Transformation of adolescent peer

relations in the social media context: Part 2—application to peer group processes and

future directions for research. *Clinical child and family psychology review*, *21*(3), 295-

319.

O'Keeffe, G. S., & Clarke-Pearson, K. (2011). The impact of social media on children,

adolescents, and families. *Pediatrics*, *127*(4), 800-804.

Patton, D. U., Hong, J. S., Ranney, M., Patel, S., Kelley, C., Eschmann, R., & Washington, T.

(2014). Social media as a vector for youth violence: A review of the literature. *Computers

in Human Behavior*, *35*, 548-553.

Sherman, L. E., Payton, A. A., Hernandez, L. M., Greenfield, P. M., & Dapretto, M. (2016). The

Power of the Like in Adolescence: Effects of Peer Influence on Neural and Behavioral

Responses to Social Media. Psychological Science, 27(7), 1027–1035.

https://doi.org/10.1177/0956797616645673

Underwood, M. K., & Ehrenreich, S. E. (2017). The Power and the Pain of Adolescents' Digital

Communication: Cyber Victimization and the Perils of Lurking. *American Psychologist*,

72(2), 144-158. https://doi.org/10.1037/a0040429