Cyberbullying and Adolescents

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Abstract

Purpose of Review—Cyberbullying is an aggressive behavior involving a type of electronic communication intending to harm a victim that can have profound effects on adolescents. This review examines the epidemiology, issues from cyberbullying, presentation to care of its victims and proposed interventions to this behavior.

Recent Findings—There are a variety of physical and psychological effects on victims of cyberbullying that can include recurrent abdominal pain, headaches and difficulty with sleep. In addition, victims have higher rates of anxiety, depression, suicidal ideation and a lower level of well-being. Unfortunately, victims may remain silent, so screening for cyberbullying is encouraged in a variety of settings. Interventions can be designed at the level of the victim (and perpetrator), family, school and other support networks. Prevention of cyberbullying can be a focus for providers of healthcare.

Summary—Cyberbullying can have profound biopsychosocial effects on its victims. There are strategies currently in use and under development to identify and intervene on behalf of those affected by these behaviors.

Keywords

cyberbullying; adolescence; intervention; depression; suicide; biopsychosocial

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Introduction

Michelle Carter, age 20, was convicted of involuntary manslaughter and sentenced in 2017 to prison for her role in the 2014 suicide of her then 18-year-old boyfriend, Conrad Roy Jr. The case against Carter, according to prosecutors, rested on text messages that she sent to Roy that encouraged him to end his life which he did by carbon monoxide poisoning. Phoebe Prince, a 15-year-old immigrant from Ireland, committed suicide in 2010 by hanging after bullying online and in school by her peers.

Bullying has been a well-documented phenomenon across the United States and internationally as well. Within Massachusetts, the stories of Michelle Carter, Conrad Roy Jr and Phoebe Prince serve as powerful reminders of the impact of cyberbullying, verbal bullying and intimidation.

Though there is not one standard definition, in the state of Massachusetts, bullying is defined by the Department of Education as "*the severe or repeated use by one or more students of a written, verbal, or electronic expression, or a physical act or gesture, or any combination thereof, directed at another student that has the effect of: (i) causing physical or emotional harm to the other student or damage to the other student's property; (ii) placing the other student in reasonable fear of harm to himself or of damage to his property; (iii) creating a hostile environment at school for the other student; (iv) infringing on the rights of the other student at school; or (v) materially and substantially disrupting the education process or the orderly operation of a school*"(1). It is this electronic expression, in particular, that has catapulted in recent years with the advancement in technology, the ease of communication via social media, as well as the dissemination and access to technology among grade school children and beyond.

Definition of Cyberbullying

Cyberbullying has evolved in many forms, which has created difficulty in establishing a unified definition that is widely accepted by clinicians. The definition of bullying itself does not easily translate to the cyber arena, but at its core, primarily refers to "an intentional act of aggression, carried out to harm another individual using electronic forms of contacts or devices" (2). Though initially limited to electronic mail, cyberbullying has slowly begun to incorporate a wider array of forms of electronic communication, ranging from personal blogs, text messaging, video content posted to streaming websites, such as You Tube, and more recently, social media formats including Instagram, SnapChat and TikTok.

Further exacerbating the potential for a severe impact of cyberbullying is access to smartphone technology, the audience involved in cyberbullying efforts, the opportunity for "anonymity by perpetrators," the "permanency of bullying displays on the internet," as well as the ability of bullying to occur regardless of distance from the victim and with "minimal constraints on time (3)." Cyberbullying can take on the following forms: flaming (online fights using electronic messages with angry and vulgar language), harassment, cyber stalking, denigration, impersonation, outing, trickery and exclusion (4). In the case of Michelle Carter, she used text messages to Conrad Roy to encourage him to end his life.

Epidemiology

Given the lack of consensus on a definition for cyberbullying, it has been difficult to easily quantify its true prevalence in the United States and the global arena. In a small sample of global studies, prevalence of middle and high school cyberbullying ranged from 1–30% for suspected perpetrators, and from 3–72% for suspected victims (3). The prevalence has been thought to vary due to a multitude of factors including varying definitions for what constitutes an act of cyberbullying, cross-cultural differences in victim reporting, as well as access to technology, which could limit the ability to participate in cyberbullying. Studies available across the U.S. and internationally identify vulnerable populations of adolescents for whom special attention should be made, including females, LGBTQ youth, younger adolescents and youth with disabilities (5, 6).

Studies have also demonstrated gender differences in the prevalance of cyberbullying vicitimization, with female adolescents reporting a higher prevalence of victimization (9.4% for single encounter, 13.3% with two or more encounters) than their male counterparts (8.3% for single encounter, 7.8% with two more encounters) (7). Being bullied is further associated with increased suicidal ideation, delinquency and global psychological distress among both male and female adolescents, though more marked in females and more pronounced with repeated cyberbullying encounters or incidences (7).

Surveys of cyberbullying victims population further identify a large proportion of youth who identified as a part of the LGBTQ community, as well as youth with disabilities. In a Taiwanese study reviewing 500 homosexual or bisexual men between the ages of 20 and 25, there were reported significant associations between low family support, early coming out and traditional bullying victimization with cyberbullying (8).

In addition, adolescents and young adults with mental health needs or disabilities have often been targets of cyberbullying efforts. A Chinese study examining associations between cyberbullying and social impairment, attention-deficit-hyperactivity disorder (ADHD) and oppositional defiant disorder (ODD) in adolescents with high functioning autism spectrum disorder demonstrated that older adolescents and those with more severe ODD symptoms were more likely to be victims of cyberbullying. The victims of cyberbullying in this population were more likely to report symptoms associated with depression, anxiety and suicidality (9).

Issues from Cyberbullying

Cyberbullying has been associated with a variety of psychological and physical effects on its victims (Table 1) (10–12). Victims of cyberbullying have higher rates of depression when compared to other forms of traditional bullying. In addition, victims may have more anxiety and suicidal ideation compared to peers who do not face victimization (3,8). A varying percentage of cyberbullying victims pursue suicide. Some studies suggest that children and adolescents who are both victims and perpetrators of cyberbullying constitute a distinct group with the highest risk for psychosocial problems, such as depressive and anxiety symptoms, as well as for lower levels of well-being in general. Victims of cyberbullying

have also shown impacts in their family dynamics and relationships with friends, with many demonstrating increasing isolation and loneliness as well as decreased trust in their support groups (13). Some studies have indicated that reactions to cyberbullying may depend on the form of media (video vs. text conversation vs. phone calls) with some suggestion that pictures and video were the most negatively impactful on adolescents (14).

There have been relatively few studies examining the effect of cyberbullying on adolescents' physical health. Grade school adolescent cyberbullying victims are often more likely to report somatic symptoms including difficulty sleeping, recurrent non-specific abdominal pain and frequent headaches (3). However, certain studies indicate that cyberbullies might be better off than victims with some studies finding no relation between the role of perpetrator and depressive symptoms (2). Other studies have focused on health impact as opposed to specific health problems by examining self-reported health-related quality of life (HRQOL). Survey data collected from college students have demonstrated long term impacts on physical health due to pre-college bullying experiences with lower HRQOL, likely mediated through depression (15). Furthermore, the study proposed that precollege exposure to cyberbullying might have latent effects that could be triggered by future bullying-related traumatization, including reduced confidence in social situations as well as isolation (15).

In addition, there have been links between cyberbullying and increased risky behaviors including substance abuse across a variety of substances. In a study examining a population of Greek national undergraduates, both male and female late adolescents who were victims of bullying during middle and high school were less likely to use condoms during college years when compared to non-victimized students (16). Furthermore, men who were bullies or victims of bullying were twice as likely to experience excessive drunkness and three times as likely to pay for sex. In addition, for males, cyberbullies and cybervictims were more likely to report smoking (16). Compared with traditional bullying, cyberbullying may have a stronger link to substance abuse, with one longitudinal study demonstrating that cyberbullying victimization predicted depression and substance abuse six months later (17). In addition, both victims and perpetrators of cyberbullying have been linked with increased use of marijuana with an implication that this may be indicative of a larger substance abuse problem among this population (18). This highlights the emergence of gender specific risks and behaviors associated with cyberbullying that require further evaluation.

The relationship between cyberbullying and an adolescent's use of the internet has also been explored. A study of 845 adolescents with a median age of 15 years demonstrated that cyberbullying victims were at increased risk for having problematic internet use (PUI), which included a preoccupation with the internet, an inability to control their use of the internet, as well as continued use despite negative consequences (19). However, it remains unclear whether the increased time spent on the internet is deleterious or protective, as victims may be using the internet as an escape mechanism to mitigate anxiety and reduce negative feelings of isolation. Nevertheless, increased time on the internet by cyberbullying victims does place them at risk for harassment, invasion of privacy and exploitation (19).

Presentation to Care

Unfortunately, despite the deleterious effects of cyberbullying on a victim's mental and physical health, many victims remain silent and hesitate to reach out for help. The onus, therefore, remains on others: educators, providers, family members and social supports to recognize common signs and symptoms of cyberbullying. Most often, individuals will notice that such victims begin to avoid school, a primary setting in which they face the effects of cyberbullying. In addition, a large majority of perpetrators may be members of the victim's school community.

Accordingly, the victim may have increased school absenteeism due to somatic symptoms (frequent stomachaches, headaches, sleeping disruption or nightmares) or academic difficulties due to lack of school attendance or problems with concentration. Victims may demonstrate lower self-esteem, increased depressive symptoms and anxiety with detachment from friends or sudden withdrawal at home or school. On the contrary, these affected youth may show sudden bursts of anger or demonstrate increased self-destructive behaviors, such as cutting, or acts of truancy (10–12). Ultimately, since a victim may not come forward to seek help, it is important that support groups bring the individual to care.

The ability to prevent or intervene in cyberbullying most effectively hinges upon screening to detect and identify victims, as well as perpetrators. There is difficulty in determining the best method to screen for bullying in the medical setting, whether this is in the emergency department or at a primary care visit. Though direct questioning may be effective, studies have posited that it may be more effective to use a questionnaire to elicit accurate responses from patients. The "Guidelines for Adolescent Preventive Services" form includes screening across a variety of health behaviors and experiences, including bullying (20). Couching inquiries about bullying in the setting of assessing adolescent behavior may serve to normalize questioning about bullying and in turn allow adolescents to open up to providers about their experiences. These screens can focus on questions such as (21):

- How often do you get bullied or bully others?

- How long have you been bullied or bullied others?

- Where are you bullied or bully others?

- How are you bullied or how do you bully others?

Screening for cyberbullying should be an important element of adolescent care. Furthermore, screening should not be limited to non-urgent scenarios. Studies have shown that adolescents report exposure to cyberbullying and violence in a variety of urgent medical situations as well, including emergency rooms, inpatient hospital stays and school-based clinics. This underscores the importance screening for cyberbullying during any patient interaction.

Though victims may present to their pediatrician's office for assistance, often these youth present to the emergency department. These encounters may be due to mental health needs,

in the setting of suicidal ideation or attempts at self-harm, previously identified as significant symptomatology in cyberbullying victims. Studies demonstrate that over three quarters of victims of cyberbullying will present to the emergency department with a mental health need as their chief complaint and that more than three quarters of adolescents presenting with suicidal ideation as their chief complaint have endorsed previous incidences of cyberbullying (22). Cyberbullying was also found to be the strongest predictor of suicidal ideation, while controlling for other important factors, such as age, gender and psychiatric diagnosis (22). Therefore, it remains important that providers caring for adolescents and young adults presenting with suicidal ideation pointedly ask about bullying and cyberbullying in the patient's life. In a Canadian population of adolescents, cyberbullying victims were more likely to attempt, or complete suicide compared to those who had not been bullied (18). It is further postulated that cyberbullying victims may seek help less frequently or underreport incidences compared to those who have been traditionally bullied and that increases their risk of suicidal ideation (22).

Types of Interventions

Interventions designed to target and mitigate cyberbullying remain as important as attempts to intervene and provide support for victims. These efforts should not solely focus on victims; they should also work with perpetrators. Programs need to reinforce positive values in school age children to reduce the number of cyberbullying perpetrators.

Though these interventions may occur in a multitude of settings, many studies have primarily focused on school-based interventions. This seems appropriate given that a large proportion of cyberbullying incidents take place amongst school classmates. Social support has been shown to be an important buffer when adolescents experience cyberbullying (23). As previously suggested by the efficacy of school-based interventions, perceived social support from family and teachers has been shown to potentially ameliorate the association between cyberbullying and several outcomes at the psychosocial level. A study of 131 pupils with developmental disorders who had received social support from parents and teachers demonstrated reduced depressive symptoms one year after a cyberbullying experience (24).

A viable intervention program and cyberbullying prevention mechanism may rely on specific strategies such as improved access to resources, as well as efforts to increase the potential protective effects of social support figures in an adolescent's life, including family members, friends and teachers (2). This study in particular suggested that there may be differences between male and female victims as to which form of social support is more efficacious with an implication that girls may benefit more from social supports than their male counterparts (2). However, the efficacy of social support in preventing cyberbullying or supporting its victims is often contingent upon adolescents seeking help or divulging their victim status.

Some studies suggest that effective interventions focus on enhancing an adolescent's empathy, promoting positive social relationships with family and decreasing screen time (13). In particular, given the lack of nonverbal cues inherent in the nature of cyberbullying, it is postulated that adolescents who serve as cyberbullying perpetrators may demonstrate little

empathy for their cyber victims. Furthermore, given that poor self-esteem has been shown to be a significant factor among victims and perpetrators alike, both educators and health care providers should focus on an adolescent's emotional status, particularly with those who seem to demonstrate not only a decline in their self-esteem but also who are showing more troublesome behaviors such as truancy and substance use (18).

Another potential focus of intervention may hinge on coping strategies for adolescents (25). Coping strategies are divided into two types: emotion-focused and problem-focused. There are two emotion-based strategies that victims of cyberbullying can utilize: self-control and escape-avoidance. The self-control strategy employs inhibitions of emotional expressions and spontaneous behavior (26). The desire to regulate emotions brought on by a stressful situation is usually carried out when there is a belief that nothing can be done to change the unfavorable conditions (27). This may lead to increased avoidance and depression-based coping in a cyberbullying victim's day-to-day activities with increased depressive symptoms and health complaints.

Problem-focused strategies may be particularly helpful to cyberbullying victims, as they often cannot face (or identify) their aggressor or stand up to the bully (28). As a result, coping strategies that attempt to either manage or solve the problem may be more beneficial to victims of cyberbullying, motivating them to implement changes, both internally and environmentally. Although there is no one right way to cope, adolescents employing "more approach and problem solving" as opposed to avoidance strategies, and assessing a stressor to be a challenge were shown to have more adaptive outcomes (29). Such strategies teach the importance of standing up for oneself as well as using methods to not only deal with cyberbullying but manage the daily stress (30).

A validated tool, such as the Utrecht Coping List for Adolescents, has been a long-standing tool used to help adolescents work through their current emotional coping-based mechanisms and transition to thinking in a more pro-active problem-based fashion. This underscores the importance of both social skills and assertiveness training which inspire victims to adopt more active problem-based strategies, such as telling someone about their bullying or making new friends (31). These coping strategies, in conjunction with school, peer group and teacher-based efforts to prevent bullying, may bolster the prevention and resiliency efforts currently underway.

Prevention of cyberbullying should be a focus for healthcare providers. Anticipatory guidance remains a cornerstone of the well child and well adolescent visit, and should include strategies conveyed to both patients and their parents on how to identify signs of cyberbullying, In addition, discussion of stigma and myths about cyberbullying should occur. This could include discussions about the use of technology in the home, as well as the best and safest social media practices for the adolescent. Furthermore, taking a history about the signs and symptoms of cyberbullying from caregivers independently of the adolescent may be helpful in determining the patient's source of distress and to appropriately plan interventions.

A variety of screening tools have been developed (Table 2) that represent the potential to identify victimization as well as serve as an opportunity to respond and intervene (32). However, these tools address the larger umbrella phenomenon of bullying and are not specific to cyberbullying. Therefore, instruments and tools that can be used adequately to identify victims and aggressors of cyberbullying still remain a large area of need.

Many states have responded to the surge of cyberbullying with legislation focusing on prevention, intervention and consequences. In Massachusetts, as a response to the deaths of Phoebe Prince and others, legislation was enacted so that all school staff (including educators, nurses, custodians, athletic coaches, advisors to extracurricular activities, administrators, cafeteria workers, bus drivers, and paraprofessionals) must report bullying to the school administration (1). These individuals are also required to receive training on bullying prevention and intervention (1). That stated, effective interventions to prevent cyberbullying-related suicide or suicidal ideation have not yet been identified or vetted through research.

Currently, there are a variety of school-based interventions focused on adolescent suicide awareness, typically presented between the ages of 12 and 18. Preventative interventions focus on suicide awareness campaigns or screening as primary preventative measures, or secondary approaches to provide support to those affected by suspected suicides. Some schools have implemented psychologic interventions in those who have already demonstrated attempts at self-harm, including cognitive behavioral therapy (CBT), dialectic behavioral therapy (DBT) and home-based family interventions (33). However, these services are not routinely available in school systems and their efficacy in identifying cyberbullying victims and pro-actively preventing attempts at suicide are not well understood. Ultimately, though there are school-based interventions in place for suicide awareness, only a few are evidenced-based and there is little to demonstrate the true efficacy of these interventions for preventing suicide and suicide attempts in the adolescent population. Therefore, the adolescent population serves as an untapped area of research into evidence-based interventions and policies, potentially to be extrapolated from other high-risk populations and proven efficacious efforts.

Much of the current literature focuses on an older adolescent population (i.e. high school and undergraduate). It may, therefore, behoove the community to understand the effects of cyberbullying in younger adolescents (less than 12 years of age) and how this may inform prevention efforts. This is a particularly important focus given the ubiquity of technology and internet access in a young child's life. The large majority of children regularly use the internet (17). Some studies have demonstrated similarly negative effects on psychological well-being of younger adolescents secondary to cyberbullying victimization, poor self-esteem and decreased peer socialization (34). The ability to identify these negative effects at a younger age may allow us to build more effective programs and coping strategies at an earlier age to ultimately foster a population of adolescents with increased resiliency and skills to face the stressors of life.

Conclusion

Ultimately, the prevention of cyberbullying rests not only on the shoulders of victims and their families, but on educators, providers and researchers. More focused studies and evaluations of interventions may not only reduce the prevalence of cyberbullying but also lower the mental health sequelae seen in the short and long term. The serious consequences of cyberbullying, particularly surrounding mental health issues and suicidal ideation, underscore the importance of effective and evidence-based bullying prevention programs and support groups in school-based settings. In addition, the multitude of factors associated with victimization in cyber sexuality-related bullying as well should be factored into developing prevention and intervention strategies.

Acknowledgments

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Table 1.

Signs and Symptoms of Cyberbullying (10–12)

• Decreased self-esteem or feelings of helplessness
• Increased depression and/or anxiety
• Sudden loss of friends, isolation from peers or withdrawal at home
• Reported health problems (e.g., stomach aches, headaches) for which adolescent wants to stay at home or fake illnesses
• Increased truancy or school absences
• Decline in academic performance or loss of interest in school work
• Changes in eating habits or appetite
• Difficulty sleeping or frequent nightmares
• Sudden anger, rage or other emotional swings
• Self-harm behaviors, such as cutting or suicidal ideation

Table 2.

Current Bullying Assessment Tools (32)

Current Bullying Assessment Tools
The Bully Survey
Gatehouse Bullying Scale
Olweus Bullying Questionnaire
The Peer Relations Assessment Questionnaires
Peer Relationship Survey
"My Life in School" Checklist
The Personal Experiences Checklist
California Bullying Victimization Scale