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The Effects of an Online Psychoeducational Workshop to Decrease Anxiety and Increase Empowerment in Victims of Trolling and Cyberbullying

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Trolling and cyberbullying are predominant behaviors in an internet culture often motivated by a desire to create discord or distress. Despite significant effort, the verbal, psychological, and emotional abuse spurred by individuals who troll or cyberbully is impossible to fully monitor and control. In addition, psychological interventions for distress caused by these negative online interactions are limited, leaving victims struggling to find coping mechanisms for traumatic, yet intangible, encounters. Given society's increasing use of the internet for social interaction, this negative affect merits exploration of an effective therapeutic intervention specifically for online harassment. This study used a single-case experimental design to examine a functional relation between a brief psychoeducational workshop and three adult participants' feelings of internet-related anxiety and empowerment. Results indicate that this workshop may beneficial for victims of trolling and cyberbullying, particularly for web forum moderators. Possible implications include the development of a digital K-12 school-based intervention for primary and secondary school-aged students that restores positive affect from online harassment and fortifies them against future attacks. This may be particularly helpful for children and adolescents who meet criteria for mental health or learning disabilities that already leave them at risk for anxiety, depression, and interpersonal difficulties.

Keywords: *cyberculture; bullying; short-term intervention; social media; single-case design*

THE EFFECTS OF AN ONLINE PSYCHOEDUCATIONAL WORKSHOP TO DECREASE ANXIETY AND INCREASE EMPOWERMENT IN VICTIMS OF TROLLING AND CYBERBULLYING

The use of the internet and social media for occupational, social, and communicational purposes is increasing, particularly in light of the 2020 COVID pandemic. Approximately 348 million people in North America reported internet usage in 2019 compared to 108 million in 2000 (Internet World Stats, 2020a). This accounts for almost 95% of the entire North American population – the highest percentage of users of any geographical region in the world (Internet World Stats, 2020a). Almost 70%, or approximately 252 million, reported using Facebook as a means of social networking in 2020, indicating a proliferation of social networking through digital mediums (Internet World Stats, 2020b). While there is little consensus on the costs and benefits of this online social networking, there is sufficient evidence that its usage is changing patterns of in-person interaction, perception, and behavior (Jin & Park, 2010; Mantook et al., 2015).

Internet communication plays a key role in the psychological wellbeing and affect across all genders, cultures, and age groups (Chou et al., 2005; Mantook et al., 2015; Şahin, 2014). Significant usage, generally three hours a day or more, is associated with symptoms of addiction, increased stress, and anxiety when internet access is restricted (Öztürk et al., 2007; Şahin, 2014; Unsar et al., 2020). Compulsive addiction to the internet has even resulted in the classification of a novel mental health phenomenon known as problematic internet use (PIU) (Young, 2004). This problematic internet preoccupation stems from a desire to alleviate feelings of anxiety and isolation, yet more often results in increased interpersonal problems, withdrawal from real-life interactions, and risk of encountering online harassment (Gámez-Guadix et al., 2013; Gámez-Guadix et al., 2015). PIU and related internet addiction occurs when an individual is unable to limit their internet use, even when such use creates social, emotional, behavioral, familial, and academic problems (Unsar et al., 2020).

Alarmingly, high duration of internet use and internet addiction level are likely to occur in younger ages, possibly due to the fact that children are currently introduced to the internet early in life (Yang & Tung, 2007). Trends of internet use in education show that these early life stages are continuing to decrease over time, leaving children and adolescents particularly susceptible to PIU during critical developmental stages and subsequent adulthood. Additionally, this higher internet use increases children and adolescents' likelihood of encountering abuse from other online users. Concerningly, children with dependent and introverted personality traits, depression, mental health disabilities, familial instability, and low self-esteem – and are

subsequently already higher risk for social isolation and bullying – are most susceptible to developing internet addiction (Unsar et al., 2020; Yang & Tung, 2007).

In adolescents, PIU is linked to multiple mental health and behavioral problems, including anxiety, depression, alcohol abuse, and both victimization and perpetuation of cyberbullying (Gámez-Guadix et al., 2013; Gámez-Guadix et al., 2015). Additionally, studies suggest that PIU may result in greater student burnout and poorer school performance (Tomaszek & Muchacka-Cymerman, 2020). According to Gámez-Guadix et al. (2015, p.110), this self-defeating pattern of functioning renders the internet a "dysfunctional emotional controller." This rise of maladaptive behaviors and symptomology due to ever-growing internet usage warrants concern for the mental health and emotional wellbeing of current and future internet users.

Developing strong interventions that are useful across the lifespan are critical for supporting victims and disrupting the cycle of cyber violence. This study used a single-case experimental design to test the effect of a brief psychoeducational workshop to three habitual adult internet users who reported prior harassment from trolls or cyberbullies. Authors tracked participants' affect and overall satisfaction with the interventions using self-report measures. The findings of this study and the instructional topics might provide a starting point for developing interventions for additional work with adults as well as for younger victims in school settings.

A Hostile World (Wide Web): Cyberbullying and Trolling

Due to this increased prevalence of internet use and online-rooted distress, many researchers turn to explore the phenomenon of cyberbullying, or the "willful and repeated harm inflicted through the medium of electronic text" (Patchin & Hinduja, 2006, p. 152). While there is no consensus definition of cyberbullying in the literature, it is often described as a repetitive and potentially coordinated attack carried out by an individual or group (Foody et al., 2015; Kiriakidis & Kavoura, 2010). These cyber-attacks are likely to be carried out by people the victim is familiar with in real life and originate within or develop from a school setting (Adams & Lawrence, 2011; Crosslin & Golman, 2014). The extension of such willful harm stems from malicious intent, violence, and to exercise a power differential established by the cyberbully's level of internet proficiency. Cyberbullies are motivated by a desire to inflict calculated harm on a targeted individual to elicit despair, distress, and isolation (Tokunaga, 2010).

Cyberbullying may occur across all media platforms, but is often carried out via social networking, cell phone "apps" (i.e., installable smart phone applications), and other mediums of communication, such as Facebook, Twitter, Snapchat, chatrooms, private messaging, email, and text message

(Foody et al., 2015). When polling a group of college students, Crosslin and Golman (2014) found some felt cyberbullying was better described as harassment or personal attack rather than being "picked on" due to the ubiquitous nature of social networking. This digital medium allows for such harassment to occur at all hours, well beyond school or work environments (Crosslin & Golman, 2014; Patchin & Hinduja, 2006). Research suggests that 20–40% of adolescents will experience cyberbully victimization to some degree, and that high-school aged cyberbully victims are likely to be victims in college as well (Tokunaga, 2010; Zalaquett & Chatters, 2014).

Attention to this problematic behavior is strongly merited as cyberbullying can hold drastic physical, social, psychological, and emotional consequences for bullies, victims, and bully-victims (Gámez-Guadix et al., 2013). This may include violent acts, injury, poor psychosocial adjustment, anxiety, depression, helplessness, distress, legal consequences, substance abuse, isolation, anger, delinquency, self-harm, suicidal ideation, and suicidality (Crosslin & Golman, 2014; Gámez-Guadix et al., 2013; Hinduja & Patchin, 2007; Patchin & Hinduja, 2006; Van Geel et al., 2014; Wang et al., 2011). Perhaps most concerning, multiple studies on peer victimization suggest that cyberbullying is a strong predictor of suicidal ideation and attempts in adolescent populations, and may have a stronger relation to suicidality than traditional bullying (Van Geel et al., 2014; Wang et al., 2011; Zaborskis et al., 2019). This leaves school-aged children and adolescents vulnerable to long-term consequences of cyberbullying, especially those already predisposed to mental health disorders. These consequences are far from the inclusive environments that adolescents need.

Cyberbullies are far from the only "type" of internet harassers to perpetuate distress. While research for cyberbullying significantly eclipses research on other forms of harassment, existing literature on "trolling" suggests a significant overlap in harasser-behavior and victim-distress. The definition of trolling is variable in the literature, but is generally referred to as intentional harassment motivated by a desire for attention, pleasure-seeking, revenge, or boredom (Buckels et al., 2014; Coles & West, 2016; Johnson, 2017; Shachaf & Hara, 2010). Trolling victims may be pre-targeted beforehand, but are also likely to be spontaneous targets. According to Maltby et al. (2016), trolling can range from relatively minor offenses to extreme harassment intended to cause grief and distress.

Similar to cyberbullying, trolling may occur via social media platforms, but is also seen in public interest forums (e.g., Reddit, 4Chan), comments sections on digital videos and articles, electronic encyclopedias (e.g., Wikipedia), virtual gaming platforms, and political forums (Coles & West, 2016; Shachaf & Hara, 2010). Trolls, like cyberbullies, carry out intentional attacks on individuals online, but their ultimate aim is to anonymously create

discord through deception across all pages of a social internet community. This includes (a) posting inflammatory statements or hate language to aggravate users, (b) inhibiting the growth of or attempting to divide an online community, (c) excluding or attacking new users, (d) encouraging polarization of beliefs and hostility in groups, and (e) tricking users into aimless debate (Coles & West, 2016; Johnson, 2017). Craker and March (2016) further differentiate trolling and cyberbullying:

> Although trolling behaviors and cyber-bullying share aggressive attributes, cyber-bullies are not characteristically deceptive or meaninglessly disruptive. Research on cyberbullying suggests quite the contrary; that cyber-bullies are often known to their victims in real life, and that the harassing behavior involved in cyber-bullying is very direct and specifically targeted. (p. 80)

Trolling comments are often, although not always, rooted in sensitive topics, high profile controversies, or human rights issues. Several examples of trolling include comments such as: "Is racism ever justified?" "Is feminism wrong?" and "Should women have rights?" (Ruiz, 2014). It is possible for some trolls to anonymously create dozens of fake accounts, or "sock puppets," to boost their cyber image and proliferate distress on sensitive issues (Groome, 2013). While the exact prevalence of trolling varies significantly across populations, trolls are most likely to target vulnerable groups, such as young users, women, gender and ethnic minorities, and people with disabilities (Centre for Strategy & Evaluation Services, 2019; Pulman & Taylor, 2012).

Trolls particularly benefit from internet anonymity to deceive and disrupt online social settings; this anonymity naturally afforded by myriad websites can facilitate a feeling of deindividuation (Buckels et al., 2014; Coles & West, 2016). In this state, anonymous individuals possess diminished self-awareness, "toxic online disinhibition", and lower feelings of accountability in their online actions (Chiou, 2006; Wachs et al., 2019). Deindividuation in adolescents and adults is associated with increased engagement in risky activities, antisocial behaviors, lowered self-monitoring, heightened disclosure of private sexual experiences, and impaired perception of the severity of aggressive actions carried out towards others (Beaman et al., 1979; Carver, 1974; Chiou, 2006; Diener et al., 1976; Wachs et al., 2019; Wallace, 2001).

While self-regulation and effects of deindividuation in trolls are understudied, current research links trolling more closely with an active desire to harm others that they are able to leverage through digital anonymity. Most disturbingly, trolling behaviors are associated with Dark Tetrad personality

traits (i.e., psychopathy, sadism, narcissism, Machiavellianism) in people who are likely to suppress such traits in real life (Brown et al., 2019; Buckels et al., 2014; Pulman & Taylor, 2012). Trolls with these personality features are likely to gain pleasure from manipulation, inflicting pain, exerting power, and perpetuating cruelty across all interpersonal relations (Brown et al., 2019; Buckels et al., 2014; Craker & March, 2016). Similarly, trolls may be motivated by negative social potency, or an intrinsic drive to obtain influence over others through antisocial behavior, lack of empathy, and callousness (Craker & March, 2016). Links between Dark Tetrad features and trolling is now found across multiple races and genders, particularly in males (Brown et al., 2019).

Victims report a wide variety of severe emotional experiences in response to hostile trolling, including frustration, anxiety, anger, depression, shame, humiliation, low self-esteem, paranoia, disempowerment, symptoms of posttraumatic stress disorder, substance abuse, online and offline social withdrawal, suicidal ideation, and self-harm (Centre for Strategy & Evaluation Services, 2019; Coles & West, 2016). Website moderators, or internet users who are responsible for keeping order on public message boards that are frequented by trolls, also self-report feelings of depression, anxiety, and trauma-like symptoms, sometimes even after only a brief encounter. Prevalence and intensity of trolling behavior has prompted members of some online social media forums to seek emotional support from others online, although formal therapeutic support groups for troll-victims are lacking (Ruiz, 2014). This suggests that – although trolls aim to disrupt digital collectives – troll attacks take a heavy toll on individual users as well.

Previous Support Efforts for Victims

There are currently several approaches proposed to challenge online harassment, including legal action and the creation of algorithms that identify harassers based on posting behavior (Centre for Strategy & Evaluation Services, 2019). While legal steps are sometimes successful in cases of extreme trolling and cyberbullying, some express concern that such steps are too infrequent and insufficient in light of the prevalence of online hostility (Manjoo, 2014). Legal protection for victims is further complicated by the fact that cyberbullying and trolling are not universally recognized as crimes (Centre for Strategy & Evaluation Services, 2019). Even when successful, legal action also not always effective in healing the resulting emotional and psychological harm or even bringing a halt to trolling and cyberbullying behavior (e.g., Somin, 2015, Wells, 2012).

There is a promising direction in the development of a variety of anti-harassment algorithms, which may predict where cyber-hate is likely to occur, identify fake accounts, and remove vowels from hostile comments

(i.e., "disemvoweling"). Such algorithms, considered "hard" interventions, aim to create online environments that can automatically detect harassment and rapidly terminate the user account without the need for a human moderator. However, despite sincere efforts, there is currently no effective digital authority over anonymous posting that universally prevents, controls, or eradicates the pervasiveness of verbal abuse and severity of online victimization. These limitations encourage the development of community-based "soft" interventions – particularly for school-aged children – to foster awareness, coping skills, and digital resiliency in the face of online abuse (Centre for Strategy & Evaluation Services, 2019).

Preventative strategies to combat cyberbullying are largely proliferating in academic settings, with some suggesting that schools bear a crucial responsibility in preparing students for online harassment (Foody et al., 2015; Pelfrey & Weber, 2015). Pearce et al. (2011) advocated for a multisystem "whole-school" approach based on a meta-analysis of existing anti-cyberbully programs. This systematic approach incorporates cyberbully coping strategies at the school (e.g., policy, peers, teachers), classroom (e.g., curriculum), home (e.g., caregivers, siblings), and individual level. While the success of whole-school approaches remains understudied, having a protective school environment, proactive anti-bullying policies, and school-family-community partnerships show promising results for cyberbully prevention (Pearce et al., 2011).

Teachers or school administration may spearhead a whole-school approach, but Cross et al. (2015) found similar success across their three-year Cyber Friendly Schools Project by enabling young students to act as the 'cyber' leaders in delivering whole-school interventions. Programs that included students in the search for cyberbully solutions show a positive impact on students' sense of self-efficacy, empowerment, and confidence, as well as a greater likelihood of reporting cyberbullying to an adult (Cross et al., 2015; Slonje et al., 2012). However, some adolescents still report that, in spite of such school support, cyberbullying still feels inescapable (Pelfrey & Weber, 2015; Slonje et al., 2012).

While a multisystem model to foster support against cyber-attacks is an undoubtedly thorough and dynamic proposal, there are several limitations that currently prevent its widespread use. This includes a significant dependency on school involvement, which is challenging in educational settings already strained in resources, time, and staff or teacher availability. Students may not readily have access to consistent support from other systems included in ecological models, such as attentive caregivers, caring peers, or sufficient individual support for mental health or learning disabilities. In-person school-based workshops for cyberbully prevention, while also promising, are inherently limited by environment. This is difficult when cyberbullying can occur at all times and across digital settings.

Affordable internet programs and apps for stress-management, mindfulness, distress tolerance, and other psychological interventions specifically for troll and cyberbully victims are in relatively nascent or theoretical stages of development. Techniques originating from internet-based Cognitive Behavioral Therapy (iCBT) (e.g., Carlbring & Anderson, 2006), Acceptance and Commitment Therapy (ACT) (e.g., Hayes et al., 2011), Relational Emotive Therapy (REBT) (e.g., Ellis, 1995), cognitive bias modification, empathy training, and mindfulness practices frequently comprise these current hypothesized interventions (Chambers, 2013; Foody et al., 2015). Jacobs and colleagues (2014) most notably made strides through their creation of a web-based, REBT-rooted psychological program for adolescent cyberbully victims. This three-month program, which did not include explicit consideration of trolling, successfully operated outside of a school setting and showed promising implications for cyberbully-victims.

Currently, cyber- and school-based programs designed to help students of online harassment often fail to differentiate trolling encounters. While not all children and adolescents are targeted by peers for cyberbullying, all are susceptible to being trolled by a hostile stranger. This may even occur in websites that they use to find support or safely bond with others over shared interests and activities. Previous research suggests that mental health outcomes in cyberbully and troll-victims are similarly severe, explicit consideration for both types of harassment is crucial in developing a holistic coping intervention. Additionally, given the psychological impact of online abuse, the authors advocate for the inclusion of specific, evidence-based therapeutic interventions in workshops dedicated to prepare young students for cyber-harassment. Overall, this includes a training that is (a) available to students within the medium in which the bullying might occur (i.e., digitally), (b) accessible at all times outside of the school setting, (c) include specific therapeutic elements, (d) do not demand extensive time or resources, and (e) consider both trolling and cyberbullying.

Crafting a New Coping Workshop and a Focus on Empowerment

Considering that trolling and cyberbullying may reflect "real-life" personality traits and affect, online abuse might be seen as a budding "personality trait" of internet culture; as a result, a new approach to coping with hostile internet environments is needed (Buckels et al., 2014). The authors assert that this demands a refocus from inquiring how to stop trolling and cyberbullying to how we can better adapt and prepare children and adolescents to a culture characterized by it. From this perspective, improving anxiety-management and feelings of control in social networking may be more effective in enervating online abuse than trying to prevent abuse from occurring. The authors hypothesized that a brief, psychoeducational

web-based workshop would be most effective to not only restore positive affect in victims of online abuse, but also help them learn new tools to fend off future abusers. By learning new patterns of online interaction when attacked, as well as when and how to identify digital dangers, internet users may be able to break the bully/troll-victim cycle entirely.

Feedback on effective reactions to bullying, cyberbullying, and trolling helped to inform elements of the workshop. For example, research suggests that telling users of a community forum not to "feed the trolls" (i.e., engage with a hostile user when baited) does not appear to be helpful in reducing online harassment; however, assisting users in understanding that online trolls are attention-seeking and conflict-driven is associated with decreased negative affect in past trolling victims (Centre for Strategy & Evaluation Services, 2019; Maltby et al., 2016). In this way, it was hypothesized that including an explanation as to why cyberbullies and trolls engage in such hurtful behavior would be helpful to workshop attendees. Research on the sense of social reward that trolls and real-life bullies receive when engaged with by victims also provided an additional direction in explaining the motive behind abuser-behavior (e.g., Craker & March, 2016; Ross & Horner, 2009). Authors subsequently added an emphasis on the science of social reinforcement, operant conditioning, and the resulting importance of not "rewarding" cyberbullies and/or trolls by responding to harassment.

Reported student solutions for coping with online harassment from aforementioned studies include taking a moment to think before engaging with a cyberbully, considering the thoughts and feelings of others, ignoring or blocking the abuser, and seeking out support from a sibling or close friend (Pelfrey & Weber, 2015; Slonje et al., 2012). As a result, additional workshop components included the importance of stepping away from abusive users and setting boundaries with bullies through blocking. The workshop also emphasized coping tools and de-escalation steps for abuser-related distress through therapeutic mindfulness and self-reflection.

To enhance the importance of self-care, authors incorporated psychoeducation on possible online behavior patterns that are facilitated by anonymity, including deindividuation, risk taking, antisocial behaviors, and lowered self-perception (e.g., Beaman et al., 1979; Carver, 1974; Chiou, 2006; Diener et al., 1976; Wallace, 2001). This was to assist in explaining how anonymity can enhance the power, severity, and detrimental emotional impact of digital harassment. Authors subsequently provided instruction on the possible positive effects of assigning a humorous identity to an anonymous abuser to enervate distress.

For victims of cyber-hate, some clinicians emphasize interventions related to psychological resilience and raising awareness, as well as recommending the use of online support groups to process distress related to negative

cyber-experiences (Centre for Strategy & Evaluation Services, 2019). As a result, the authors placed a specific emphasis on utilizing positive online communities, recognizing personal strengths and power, promoting healthy web interactions. Relatedly, the act of taking power from an individual is a shared theme in descriptions of cyberbullying and trolling; for this reason, it was hypothesized that crafting a workshop that specifically fostered feelings of empowerment in the individual and in an online community would be therapeutic.

As the definition of empowerment varies across disciplines, McWhirter's (1991) conceptualization of empowerment from a counseling perspective was adopted for the workshop's framework. She defined this empowerment as:

> …The process by which people, organizations, or groups who are powerless (a) become aware of the power dynamics at work in their life context, (b) develop the skills and capacity for gaining some reasonable control over their lives, (c) exercise this control without infringing upon the rights of others, and (d) support the empowerment of others in their community. (McWhirter, 1991, p. 224)

Many mental health service providers consider empowerment to be a core component of the therapeutic process and include it as a specific therapeutic goal in trauma recovery (Fallot & Harris, 2002; McWhirter, 1991).

Empowerment interventions include recognizing that feelings of powerlessness do not originate from a personal deficit, but rather an external abuser or abusers, and that the victim has the capacity to positively influence their own life and choices. Some clinicians include fostering a sense of faith that victims can not only free themselves from their sense of powerlessness, but also achieve adaptive skills to thrive in future settings. In school settings, empowering students includes helping them see ways that they can transform their environment rather than reflect on how they are disadvantaged or victimized (McWhirter, 1991). Clinicians and academics may foster empowerment through cognitive and behavioral interventions, emphasizing a positive self-image, recognizing personal strengths, increasing assertiveness and decision-making, and identifying new resources (McWhirter, 1991; Rosenthal, 2015).

The authors of this study hypothesized that empowering marginalized cyber-victims may include helping the victim to remember their own resiliency, positive attributes, and strengths. Assisting the victim to reflect on past challenges that they overcame, particularly other hostile interpersonal situations, may also help them realize their own ability to create healthier

interactions for themselves in cyber-interactions. Challenging cognitive misconceptions – such as being "weak", alone in cyberbully/trolling experiences, or that one is helpless to the harasser – may help defeat self-defeating thoughts that enhance feelings of disempowerment. In addition, presenting victims with strategies to identify positive resources, such as seeking out and providing mutual support to other victims, could promote feelings of empowerment on an individual- and group-level. This latter activity is congruent with existing trolling coping strategies for web moderators (e.g., Ruiz, 2014).

The Present Study

Ultimately, assisting individuals in developing coping skills, encouraging and/or preserving self-empowerment in the face of cyber-abuse, and teaching methods to steel off future cyber-attacks served as the overarching workshop goals. To accomplish these, the authors arrived at the following workshop structure: (1) normalize negative affect created by trolls and/or cyberbullies (rationalize thoughts/feelings); (2) observe predictability of troll and cyberbully behavior when attention/engagement is provided and emphasize how this predictability is an advantage to victims (increase adaptive behaviors, perception, and expression of self-power); (3) complete an activity that pairs a humorous identity with an anonymous assailant and resulting anxiety alleviation (create new options for dealing with hidden and disempowering figures); (4) examine how sharing individual tools for dealing with trolls and cyberbullies can benefit an entire internet community (increase assertiveness, improve group empowerment); and (5) review how feelings of power at personal and interpersonal levels can be increased, thus improving internet experiences overall (stress personal ability to create change and set boundaries with trolls/bullies). Workshop interventions were rooted in CBT, mindfulness, empowerment, trauma coping, psychoeducation, and anxiety-management techniques (e.g., Buckels et al., 2014; Crosslin & Golman, 2014; Fallot & Harris, 2002; Nieuwboer et al., 2015; McWhirter, 1991).

METHOD

Participants

This study was approved as exempt from human subject approval using a University Institutional Review Board. Recruitment occurred by word-of-mouth, through a single message on a public Reddit forum for website moderators, and via a single "tweet" on a public Twitter account dedicated

to film and popular culture. Reddit is a content aggregation and social networking website that includes a vast array of forums dedicated to entertainment, news, and personal interests. Twitter is a website dedicated to "microblogging" and social networking through 280-character messages known as "tweets."

After surveying a wide range of social media outlets, the first author selected these websites given their large platforms for publicly exchangeable messages between diverse populations of internet users. In addition, both sites allowed for one-on-one communications between the researchers and prospective participants through private messaging to maintain confidentiality. Public forums for sports teams, politics, and movies served as other considerations for online recruitment, but were ultimately unnecessary. Researchers excluded internet forums dedicated to mental health treatment, trauma, disability, or crisis intervention.

Recruitment posts included a general summary of the study purpose, requirements for participation, and contact information for the lead researcher. Interested participants contacted researchers by a private online "DM" (i.e., direct message), phone, or email. The first author screened participants by phone and private DM conversations using pre-set interview questions based on inclusion and exclusion criteria. Of the five individuals who expressed interest in the study, three met the criteria based on self-report. These criteria included that the participant (a) spent time interacting with others online almost every day; (b) had at least one encounter with an anonymous user in the past after which they felt negatively, including emotions of frustration, victimization, anxiety, anger, outrage, "blood-boiling," shame, embarrassment, feeling bullied, disempowered, as though the "joke was on them," and/or feeling tricked; (c) knew what a "internet troll" and cyberbully was and did not identify as such; (d) had daily access to the internet via computer, smart phone, or other electronic device; and (e) could commit to the demands of the fifteen-day study. Additionally, participants denied suicidal ideation within the past six months, heightened emotional/psychological distress or impairment at time of recruitment, and histories of severe and persistent mental illness.

To ascertain whether they could identify a "troll" and cyberbully, the first author asked participants to independently define and give examples of each that they believe they encountered online directly and/or heard about from others' experiences. Participants each provided definitions of trolling and cyberbullying congruent with those outlined in scientific literature and used for the study. In their examples, all three reported instances they had heard of in which friends, family, and/or individuals in the news felt victimized by trolls or cyberbullies online, as well as specific personal instances in which they felt maliciously targeted. Examples of harassment from known and unknown digital assailants included: (a) unsolicited name-calling; (b) discriminatory statements on the basis of cultural identity (ex. gender,

ethnicity); (c) aggressive or cruel mocking of personal opinions, interests, writing/grammar style, or public profiles; (d) attempting to unite other online posters against one individual or small group of individuals; (e) belittling retaliatory remarks or defensive statements/positive support from other online users; (f) creating multiple "sock puppet" accounts to support the bully's own post or to continue harassment after the abuser's original account was blocked, muted, or banned; (g) repeatedly requesting evidence for an opinion or statement under a guide of ignorance with an insidious intent of disempowering and frustrating posters (i.e., "sealioning", see Johnson, 2017), (h) threatening physical and sexual violence; and (i) cyberstalking.

One female and two male adults comprised the final sample: Marta, Chris, and Adam. [1] Marta, a 45-year-old woman of Native American descent living in the United States, reported a daily average of 5.9 hours of online social interactions. Marta noted that she spent at least several of hours of this time posting on online forums and social media platforms dedicated to film and television. Chris, a 28-year-old Hispanic male also in the United States, reported a daily average of 3 hours of online socialization and particular distress from trolling in the comments section of videos. Adam, a moderator of a popular internet forum often frequented by trolls and cyberbullies, was a 35-year-old White male living in Canada and reported 2.4 hours of daily online interpersonal interactions.

All three reported multiple encounters of harassment from one-time, anonymous internet trolls within the past six months, while Marta and Adam also endorsed multiple instances of recurring abuse and bullying from an identifiable individual and/or group of individuals. Additionally, all three endorsed past instances of receiving hostile insults, personalized threats, and belittling statements via private message. Participants denied intentional engagement in the harassment, bullying, or victimization of other online users; however, Marta and Chris admitted to struggling with not reacting defensively when targeted. Adam noted that, while he felt he was better equipped to remain unengaged when feeling attacked online, he struggled to let feelings of distress go even when walking away. Marta and Adam both reported instances in which a hostile user or small group of users followed them across multiple internet forums to continue public attacks.

Measures

Eight Likert scale items comprised the online survey as a measure of anxiety and empowerment in relationship to online trolling or cyber bullying. The first seven items were prompted with the phrase "Following my internet usage today…" and were scaled from 1 (Not at all) to 5 (Totally or Completely). The eighth question asked each individual to rate their health, comfort, and happiness after their internet usage that day, and was scaled from 1 (Absolute Worst) to 10 (Absolute Best). All questions had an option

1. The names of the participants in this study have been deidentified to maintain confidentiality.

for "Not Applicable" or N/A in case the individual did not encounter relevant emotions or experiences on that day. The first author created the survey questions based on content derived from the Beck Anxiety Inventory (1993) and empowerment literature (e.g., Fallot & Harris, 2002; McWhirter, 1991). See Table 1 for individual items.

Table 1

Survey Questions and Respective Cluster[a]

Anxiety/Distress Cluster	Empowerment Cluster
1. I feel tense, restless, and/or wound up	1. I feel as though I was taken advantage of by another user[b]
2. I feel angry or frustrated	2. I feel empowered, refreshed, and/or content
3. I cannot seem to stop thinking or ruminating over something another internet user said	3. I feel like I was able to gain control over how I felt after reading an upsetting post
4. I feel emotionally or physically exhausted	4. How would you rate your health, comfort, and happiness after your internet usage today?[c]

a Questions 1-4 on Anxiety/Distress Cluster and 1-3 on Empowerment Cluster were asked in response to the prompt "Following my internet usage today…" and were scaled from 1(Not at all) to 5 (Totally/Completely) or N/A

b Reverse scored

c Was originally scaled from 1 (Absolute Worst) to 10 (Absolute Best) or N/A; scores were rescaled (divided by 2) before being incorporated into the cluster

Experimental Design

Single-case experimental designs evolved from case study methodology and share two critical features: (1) intensive investigation of the individual client and (2) repeated observations or data collection across time (Barlow et al., 2009). In contrast, case studies target "how" and "why" research questions that aim to *explain* rather than predict certain outcomes (Yin, 2003). Case study methodology is grounded in hypothesis generation and is couched as a qualitative, or descriptive, research methodology. These methods have numerous threats to the internal validity of the design to make causal claims about a functional relation between an independent variable and dependent variable(s) (see Kazdin, 1981).

Single-case experimental designs evaluate a functional relation between an independent variable and dependent variable(s) (see Kratochwill et al., 2013) and are ideal for novel treatment interventions when resources for a larger study are limited. Such designs tend to have stronger internal and external validity than case studies or series, particularly when the design includes multiple participants, randomization, and replicated baselines (Lobo et al., 2017). Single case designs are frequently used across fields:

(a) special education (Horner et al., 2005), (b) school psychology (Radley et al., 2020), (c) counseling (Lenz, 2015), (d) medicine (Bryson-Brockman & Roll, 1996), and (e) applied behavior analysis (Cooper et al., 2020). These designs can assist in determining whether a treatment intervention produced changes at the individual level and provide direction for the exploration of an experimental intervention with larger sample sizes (Lobo et al., 2017). Although direct observation of observable and measurable variables is typically employed as part of a single-case experimental design, this was not feasible in the current experiment. Using self-report measures, in lieu of direct observation, is common in counseling literature when direct observation is not possible (see Ray, 2015).

A variety of single-case experimental designs are available for researchers to employ. In the current experiment, a nonconcurrent multiple-baseline design across participants with an embedded withdrawal design was used. Researchers made this decision because (a) participants were recruited across time, thus a concurrent multiple-baseline design across participants was not feasible and (b) embedding a withdrawal phase within the design strengthened the internal validity. A fixed-schedule was used to determine when the intervention would be introduced and withdrawn for each case. A fixed-schedule has been shown to reduce the Type I error rate over a response-guided approach (i.e., observe data to determine when to introduce or withdraw intervention) (Ferron et al., 2017).

Procedure

The study lasted fifteen days for each participant and was comprised of three phases: (1) a baseline phase (the first five days), (2) an intervention phase (the subsequent five days), and (3) a return to baseline (the last five days). The first author told Marta, Chris, and Adam to engage in internet use as they normally did in this time frame. This was to prevent causing intentional harm to participants by asking them to seek out hostile settings or increase duration of daily internet use that might put them at higher risk for troll or bully-related distress. Authors informed participants of a $5 gift card incentive and that they could see their own results at the end of the study.

After obtaining informed consent, Marta, Chris, and Adam completed an eight-item survey each of the 15 days about feelings they experienced while interacting with others over the internet. Each participant completed the survey immediately after they were done using the internet for the day. The first author created the survey using Survey Monkey, an online survey-making website, and delivered it via email at each individuals' preferred time of day and email address.

For each day of the intervention phase, Marta, Chris, and Adam individually watched an emailed video-recorded presentation that focused on the aforementioned themes related to trolling, cyberbullying, and cyberculture.

The email informed participants that they could watch the video at any time prior to completing the survey. The first author created these video presentations on a personal computer using Microsoft PowerPoint and Camtasia screen-recording software. Using Camtasia, each PowerPoint presentation was taped with an audio voiceover and converted to an MP4 video compatible with computer and smart phone software. The videos lasted between five and six minutes in duration. Table 2 presents a brief overview of workshop presentation themes.

Table 2

Titles and Basic Themes of Workshop Presentations

Title	Themes of Presentation
Presentation 1: Here There be Monsters	Rationalize negative affect, examine pathology of internet trolls/cyberbullies
Presentation 2: A (new) Token Economy	Examine patterns of operant conditioning/social reward seen in trolls/bullies via engagement; understand the internet mantra: "Don't Feed the Trolls" from a behaviorist perspective
Presentation 3: Removing the Invisibility Cloak	Review effects of deindividuation; pair positive and/or humorous stimuli to negative/abusive anonymous users
Presentation 4: Strength in Numbers	Bolster an internet community by sharing anti-trolling techniques with other members; provide support to other victims
Presentation 5: Defining Your Internet Experience	Identify and own personal empowerment; examine cognitive and emotional benefits of ignoring trolls and bullies

After all the surveys were completed, two scale scores were calculated from the eight items for each day—an anxiety/distress score and an empowerment score. Scores were clustered in this manner due to the content of the items, which inquired about rumination, tension, frustration, and emotional/mental exhaustion (i.e., anxiety/distress cluster) or feelings regarding control, independence, agency, and happiness (i.e., empowerment cluster). Four items comprised each cluster score. These questions and respective clustering can be seen in Table 1.

At the end of the study, participants completed an 11-item, online closeout survey of treatment acceptability that inquired about the perceived helpfulness of the workshop and received the incentive for participation.

Overall, Marta and Chris completed 15 daily surveys. Due to a technical error, Adam did not receive one survey during his second baseline phase; as a result, he completed 14 surveys.

Analysis

Authors converted deidentified raw data into two cluster scores, each derived from four survey items, which resulted in an overall anxiety/distress score and empowerment score. Anxiety/distress was calculated by averaging the scores on the cluster's four items; empowerment was calculated similarly, with the exception of one reversed scored item. In order to incorporate the eighth item (scaled from 1-10) into the empowerment cluster score, researchers rescaled the value by dividing the raw score by two before being averaged with the other empowerment cluster items. Responses indicating "N/A" did not receive a value on any question and remained excluded in the calculation of cluster scores.

The authors conducted a visual analysis on the two resulting score sets. This occurred by first considering the level, trend, and variability of the data within each phase of the study. After assessing for within-phase patterns, adjacent phases were compared to evaluate the level change, immediacy of effect, overlap of data points, and consistency across similar phases. The visual analysis will be used to determine whether the intervention was associated with an "effect," and the "magnitude" of the effect (Kratochwill et al., 2013).

In addition to visual analysis, two quantitative indices were computed for each AB phase contrast in the nonconcurrent multiple-baseline design across participants. Tau-U was selected because it captures the non-overlap of intervention and baseline data with the ability to consider all pairs of data and control for undesirable baseline trend (Parker et al., 2011a; Parker et al., 2011b). Tau-U values were calculated using an online calculator (Vannest et al., 2011). This resulted in Tau-U values, p-values, and 90% confidence intervals for the anxiety/distress cluster and for the empowerment cluster for all three participants.

A drawback to non-overlap indices is they do not account for the magnitude of change. The log response ratio (LRR; Pustejovsky, 2018) is a newer index that compares mean level from baseline and intervention by quantifying the natural logarithm of the proportionate change between phases. Authors selected this index because it can be converted to percent change, which is easy to interpret and used across fields, such as special education (e.g., Morano et al., 2017), applied behavior analysis (e.g., Dowdy et al., 2020), and school psychology (e.g., Van Camp et al., 2020). To compute the LRR, researchers entered data into an online calculator (Pustejovsky & Swan, 2018). This also resulted in LRR values, p-values, and 95% confidence intervals.

RESULTS

Anxiety/Distress

Figure 1 presents participants' daily anxiety/distress cluster scores, while Table 3 lists the participants' respective Tau-U and LRR effect sizes and confidence intervals for the anxiety/distress cluster. The scale of measurement ranged from one to five. High scores indicated a high level of distress, while low scores indicated low or minimal distress.

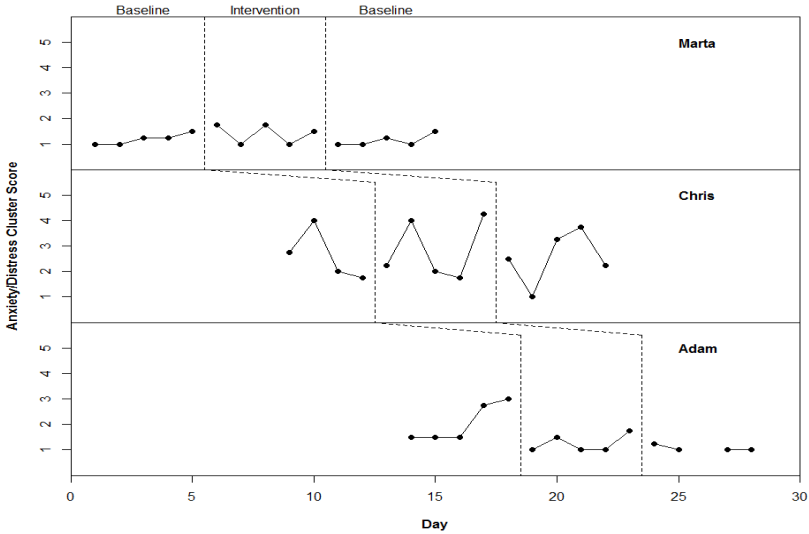

Figure 1. Average Anxiety/Distress Cluster Score for Each Participant Per Day .

Marta

For the anxiety/distress cluster, Marta reported five sessions of baseline data with a small range in scores from 1.0 to 1.50 and a mean of 1.20. The data was generally stable and showed slight linear increase in trend, suggesting a mild increase in distress during baseline phase. Her intervention data, which ranged from 1.0 to 1.75 with a mean of 1.40, was slightly more variable and did not continue the same visually-detected trend seen during baseline. The intercept gap between baseline and intervention was 0.25. The null hypothesis of no treatment effect was not rejected for Marta's anxiety/distress scores (Tau-U = 0.20, p = 0.60, 90% CI [-0.43, 0.83], LRR = 0.16 [-0.12, 0.44], 17% [-12%, 55%]). Given her low level of anxiety during the initial baseline phase, it is possible that Marta may not have been in

significant distress in either phase of the study, leaving little room for improvement during the intervention phase.

Chris

Chris did not interact with anyone over the internet on the first day of his data collection. As this was one of the main criteria for the study, his data for that day was excluded from his results. Chris reported four sessions of baseline data on the anxiety/distress cluster, ranging from 1.75 to 4.0 with a mean of 2.63. During the intervention phase, Chris provided data for five sessions with a range from 1.75 to 4.25 and a mean of 2.85. His data was highly variable and did not show any evidence of visual trend within baseline and intervention phases. This variability suggests that Chris might have had large, unpredictable fluctuations in his anxiety in both phases of the study. The intercept gap was also relatively small, at 0.50 level. Results do not indicate that there was a statistically significant difference between baseline and intervention phases on Chris' anxiety/distress cluster; Tau-U = 0.32, p = 0.40, 90% CI [-0.31, 0.95] and LRR = 0.08 [-0.44, 0.60], 8% [-36%, 83%].

Adam

Adam initially reported five data sessions in the baseline and intervention phases. Data on his anxiety/distress cluster during baseline ranged from 1.50 to 3.0, with a mean of 2.05. A moderately strong, positive trend was visually detected in his data towards the end of the baseline phase, suggesting there may have been an increase in Adam's anxiety/distress prior to the intervention phase. During intervention, Adam's scores ranged from 1.0 to 1.75 with a mean of 1.25 and an intercept gap of -2.0. Adam's scores were stable and remained relatively flat in trend across the intervention phase. Results suggest that the effect of treatment was large in decreasing Adam's internet-elicited distress and that a statistically significant difference occurred between baseline and intervention phases on his anxiety/distress cluster; Tau-U = -0.92, p = 0.02, 90% CI [-1.55, -0.29] and LRR = -0.50 [-0.91, -0.09], -39% [-60%, -8%].

While Adam provided ten sessions of data in the first two phases of the study, he failed to return the tenth survey (the last day of the intervention phase) until late the following day. As prompt return of the survey (i.e., immediately after he terminated internet usage for the day) was one of the necessary criteria established for data inclusion, there was a concern of the validity of his results. Thus, an additional analysis was conducted with the data from the delayed survey removed. This post hoc analysis (represented in the second row of Adam's data on Table 3 and Table 4) showed a larger negative effect size for Adam's anxiety/distress (Tau-U = -1.0; $p < .01$; 90%

CI: -1.87 to -0.53) with a new intervention phase mean of 1.13. This post hoc analysis does not contradict the initial interpretation of Adam's anxiety/distress cluster scores.

Table 3
Tau-U and LRR for Anxiety/Distress Cluster Scores per Participant

Participant	Tau-U [CI_{90}]	LRRi [CI_{95}], % Change
Marta	20% [-43–83%]	0.16 [-0.12, 0.44], 17% [-12%, 55%]
Chris	32% [-31–95%]	0.08 [-0.44, 0.60], 8% [-36%, 83%]
Adam[a]	-92% [-100–29%]	-0.50 [-0.91, -0.09], -39% [-60%, -8%]

Note. CI_{95} = 95% Confidence Interval; LRR_i = Log Response Ratio Increase.

a Second line reflects Adam's results w/ one survey excluded from calculation (returned past deadline)

Empowerment

Figure 2 presents participants' empowerment cluster score data, while Table 4 reports respective Tau-U and LRR effect sizes and confidence intervals. High scores on the empowerment cluster indicate strong feelings of empowerment, while low scores indicate weak feelings of empowerment.

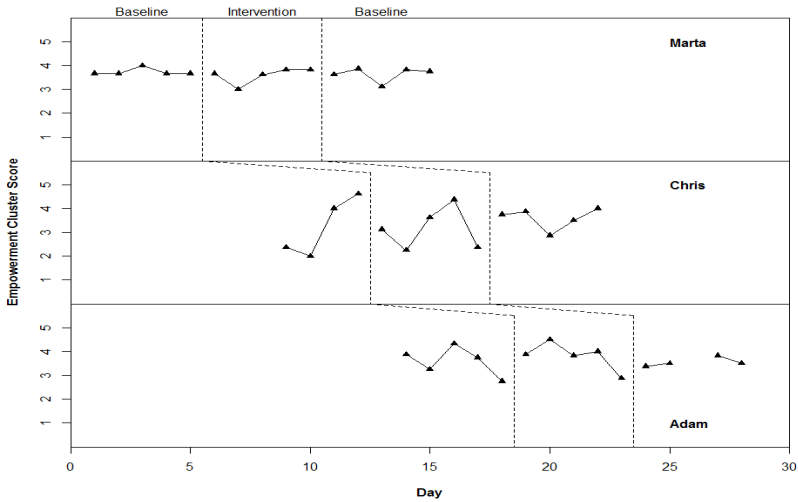

Figure 2. Average Empowerment Cluster Score for Each Participant per Day.

Marta

Marta reported five sessions of baseline data for her empowerment cluster, with a range in scores from 3.67 to 4.0 and a mean of 3.73. In the intervention phase, Marta provided five sessions of data ranging from 3.0 to 3.83, with a mean of 3.59. The intercept gap between these phases was zero, indicating no change between scores on the last day of Marta's baseline phase and the first day of her intervention phase. Her data in the baseline and intervention phases remained relatively flat in trend and showed little visual variability between scores. This suggests that her feelings of empowerment remained moderately high and relatively consistent on a day-to-day basis. Results suggest that the effect was small and did not indicate a statistically significant difference between Marta's baseline and intervention phases on her empowerment cluster; Tau-U = -0.20, p = 0.60, 90% CI [-0.83, 0.43] and LRR = -0.04 [-0.13, 0.05], -4% [-12%. 5%].

Chris

Chris reported four sessions of baseline data on the empowerment cluster, ranging widely from 2.0 to 4.62 with a mean of 3.24. He reported five sessions of data in the intervention phase, ranging from 2.25 to 4.37 and a mean of 3.15. Similar to his anxiety/distress cluster, Chris' daily responses varied significantly from day-to-day and did not show any visually detectible evidence of trend in either baseline or intervention phases. This suggests his feelings of empowerment might have fluctuated strongly, suddenly, and frequently while interacting with others online. The intercept gap was -1.50 between phases. The effect of treatment on empowerment was not statistically significant; Tau-U = -0.25, p = 0.54, 90% CI [-0.92, 0.42] and LRR = -0.04 [-0.50, 0.41], -4% [-39%, 51%] .

Adam

Adam reported five sessions of data in baseline and intervention phases on the empowerment cluster. During baseline, Adam's scores ranged from 2.75 to 4.33, with a mean of 3.59. His data showed a small negative trend towards the end of the phase, but was stable overall. Scores in Adam's intervention phase ranged from 2.87 to 4.50 with a mean of 3.81, with an intercept gap of 1.12. Adam's data in this phase exhibited a similar pattern as was seen in his baseline phase, with no clear trend based on visual analysis. Adam's Tau-U value for the empowerment cluster did not suggest a statistically significant change between baseline and intervention; Tau-U = 0.48, p = 0.21, 90% CI [-0.07, 1.03]. However, when eliminating the delayed survey data from analysis, Adam's results would alternately suggest a moderately large empowerment effect; Tau-U = 0.75, p = 0.06, 90% CI [0.16, 1.34] and LRR = 0.06 [-0.14, 0.26], 6% [-13%, 30%].

Table 4

Tau-U and LRR for Empowerment Cluster Scores per Participant

Participant	Tau [CI_{95}]	LRRi [CI_{95}], % Change
Marta	-20% [-83–43%]	-0.04 [-0.13, 0.05], -4% [-12%. 5%]
Chris	-25% [-92–42%]	-0.04 [-0.50, 0.41], -4% [-39%, 51%]
Adam[a]	48% [16–100%]	0.06 [-0.14, 0.26], 6% [-13%, 30%]

Note. CI95 = 95% Confidence Interval; LRRi = Log Response Ratio Increase.

a Second line reflects Adam's results w/one survey excluded from calculation (returned past deadline)

"Not Applicable" Responses

Chris did not mark "N/A" for any question, indicating that he provided responses for all eight questions every day of the study. Marta marked "N/A" for one item, "I feel like I was able to gain control over how I felt after reading an upsetting post," for ten days of her full 15-day data collection period. This occurred every day in her baseline period, four days in the intervention phase, and once during the baseline return. Adam also marked four "N/A" responses on this question; once during both baselines and twice during the intervention phase. All "N/A" responses were excluded from the calculation of empowerment cluster scores.

Closeout Survey

Anticipating limitations from the unstandardized questionnaire, the researchers sent a final survey to solicit further experiences with the workshop. All three participants reported that the workshop prepared them with better tools to deal with trolls and cyberbullies, particularly Chris. While Chris' daily survey responses generally lacked consistency throughout treatment and baseline periods and resulted in small effect sizes, he reported that the workshop "significantly" helped him feel more prepared and confident in his online interactions. He rated the first video in the series, which normalized anxiety caused by trolls/cyberbullies, as being "incredibly helpful". All three participants reported that presentations about the effects of deindividuation and methods of increasing online community support (i.e., presentations three and four) were "very helpful," as well as the workshop overall. The authors provide this information in Figure 3.

Both Chris and Adam also reported that the themes presented in the workshop significantly benefitted them in a positive way. Chris noted that he felt significantly more confident in his online interactions, while Marta indicated that empowerment themes were particularly helpful to her. Self-reported changes in affect due to the workshop are reported in Figure 4.

Overall, Chris' responses on the closeout survey were most notably positive than what his day-to-day survey scores suggested, although Marta and Adam reported that the workshop was beneficial to them to varying degrees as well.

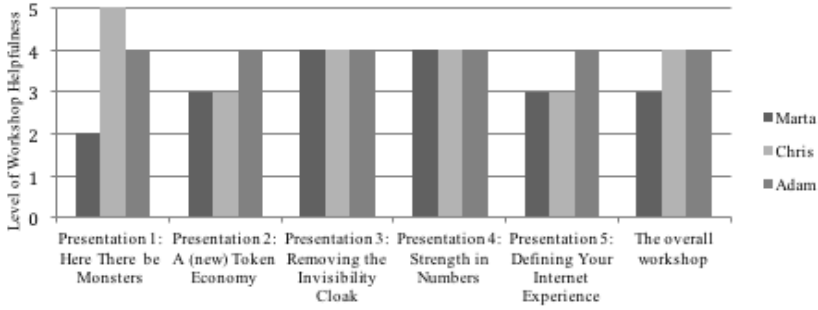

Figure 3. Closeout Survey, Part 1.

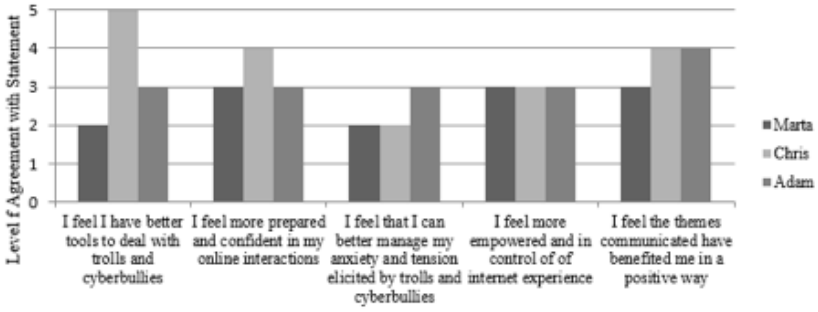

Figure 4. Closeout Survey, Part 2.

DISCUSSION

Three self-reported victims of troll and/or cyberbully abuse completed a digital, five-day psychoeducational workshop on how to increase empowerment in their online interactions and decrease anxiety/distress caused by online harassment. While statistical results do not suggest that the intervention caused a significant change in negative affect or empowerment for Marta and Chris, there is evidence that it had a strong effect on decreasing Adam's internet-related anxiety/distress and possible increase in feelings of empowerment online. Self-report feedback on the workshop themes overall suggests the experience was beneficial to all three participants.

Limitations

There are many limitations to this study, including the lack of experimenter control over how and when each individual completed the survey or watched the workshop videos. Although this did maintain a naturalistic approach—both a strength and weakness of the study design—there was ultimately no way to ensure that the participants completed the videos and surveys in an undistracted and fully cognizant manner. Similarly, while participants acknowledged that the survey was to be representative of their daily internet experiences and not their daily affect overall, it is also possible that stressful real-life factors influenced how they responded. In future research, direct observation of measurable and observable behaviors would be an optimal dependent variable for the design, with self-report as an additional dependent variable.

Some of the survey items may not have been considered relevant to the participants' internet activities. Marta's and Adam's frequent "N/A" response to the item, "I feel like I was able to gain control over how I felt after reading an upsetting post" demonstrated this problem; both acknowledged that their omission of this question was because they did not encounter a situation in which it was applicable. Marta also stated after the completion of the study that she wished that she could have provided a further explanation on some of her survey responses. This indicates that the participants might have benefitted from an opportunity to question, clarify, or deepen responses on the daily surveys.

While it was beneficial to get participants' immediate self-reported affect in relation to their daily internet experience, there was also no way to moderate the kinds of experiences they had once they logged on. To wit, some days, participants reported significant distress and anxiety as a result of a provocative or disturbing online harasser, while other days they did not encounter any such trolls or cyberbullies. As a result, surveys and derived variables may not be the best measurement of affect given inherently unpredictable online encounters.

This limitation was reflected in Marta's closeout survey, in which she noted an unexpected encounter with a particularly aggressive internet troll during her intervention phase. She stated that the themes of the workshop presented at the time were both helpful and relevant, but implied that the encounter was "so disturbing and unexpected" that it maintained feelings of distress for a couple days. In hindsight, it would have been beneficial to ask the participants to specify frequency of interactions specifically with a troll or cyberbully each day in addition to monitoring time spent interacting with others online.

Most notably, the psychometric properties of the survey are not established. While this is a significant limitation, there was no existing standardized survey to measure internet distress at the time of data collection. There may be variables other than anxiety/distress and empowerment that can be derived from the survey question bank that are better measures of internet-elicited affect. Overall, results should be loosely interpreted until reliability and validity indices are established. These were known limitations before the data collection began, which is the predominant reason the authors provided a closeout survey to solicit feedback on workshop experiences. Future systematic replications will allow researchers to evaluate the boundaries of these findings.

There are also several important factors to note about the presentations. Overall, the workshop lasted approximately 27 minutes in duration and was presented in less than six minutes each day. This is a very brief intervention in order to provide convenience to participants, and therefore might not have been sufficient in creating sustainable emotional change. Although all three participants provided consistently positive feedback both during and after completion of the workshop (refer to Figures 3 and 4), there is a possibility that the videos were not thorough enough to successfully portray the intended messages.

Based on existing literature, the themes presented in these workshops have yet to be used as a targeted psychological intervention for victims of trolling and cyberbullying. As a result, there was no comparative basis or guidelines for how these presentations should be carried out. The authors hope that themes noted in the workshop can expand in the future to include more research on trolling/cyberbullying, additional participant engagement, and enhanced activities.

Strengths and Implications

While it is encouraging that all participants reported beneficial experiences with the workshop, it is notable that it appeared to have the most statistically beneficial effect on Adam due to the fact that he was actively moderating an online forum. Given that Adam spent much of his time patrolling, interacting, and blocking trolls/bullies, which made him a heightened target of verbal attacks and threats, the researchers hypothesized that the workshop would be least effective for him, as either (1) Adam's prominent experience with trolls/cyberbullies prepared him with coping skills already, or (2) his frequent exposure to online abuse would be so potent that a brief video intervention would be insufficient in creating an effect. Adam's results suggest that the workshop was effective despite either hypothesized concern and provide possible implications for the study outcome.

While Adam's results may be due to aspects of his personality and experiences, one possible consideration for these results could be that the workshop is particularly helpful to those who frequently interact on online forums and are more likely to routinely encounter hostile users. For example, Adam could predict where he would be spending part of his internet usage on a daily basis and whom he might communicate with each day. As online moderators are often considered the "first line of defense" against trolls and cyberbullies, brief interventions to improve psychological wellbeing in online gatekeepers might be a good step towards creating "healthy" internet communities overall.

As current research presents compelling evidence that cyberbullying is tied to depressive symptomology, such an intervention for this population may be most helpful to those who spend a large amount of time online and, consequently, are more likely to experience cyberviolence (Gámez-Guadix et al., 2013). This study used an adult sample due to obstacles gaining parental consent and assent for child populations during recruitment. However, children and adolescents who are gaining new access to online communities in their social lives and education – and are highly likely to become such frequent users – may also benefit from a workshop of this nature as a primary, preventative, or restorative intervention. By encouraging the integration of cyber-coping into existing educational programs, the distress that results from cyberviolence in youth may be minimized by both introducing coping skills and bolstering existing ones.

Furthermore, while the participants in this particular study were adults, a workshop of this nature is financially affordable, time manageable, and could be easily accessible at all times by students, parents, teachers, and school administration for adolescents. This may prove to be a more feasible school-based cyber-intervention than existing programs, particularly as formal policies to govern adolescents in online interactions are still lacking. Additionally, having a web-based intervention for online harassment may help ensure that children are protected or supported 24/7, well beyond the school setting or school day.

A workshop of this nature may be particularly useful for youth who are diagnosed with mental health disorders that leave them predisposed to depression, anxiety, mood fluctuations, academic and learning difficulties, and problems in interpersonal relationships. As noted previously, children with these features are more likely to be targeted by trolls and cyberbullies for harassment, use the internet more frequently, and develop internet addiction. While research is lacking, it is possible that children who struggle with mental health disabilities may troll or cyberbully others without fully recognizing the causes or consequences of their behaviors. A psychoeducational intervention of this nature may increase insight in this population, as well as

help teachers and parents identify students at-risk for both victimization and perpetuation of cyberviolence.

This intervention is also important as many children and teens do not always own, admit, or even realize that they are victims of cyberbullying or trolling (Crosslin & Golman, 2014). Incorporating a similar workshop into existing online education for primary and secondary school-aged youth could be a good way to open conversation on cyber-abuse, soothe resulting negative affect, and create new communities of support. Ideally, this would also improve the quality of their future internet interactions. This possible implication is particularly inspired by Chris' highly positive feedback of the first video presentation, which fundamentally served as reassurance for any negative affect caused by trolls.

There are potentially several important policy implications for such a brief workshop in younger age groups if the themes show promise in other research studies. It is well known that nearly all children are taught basic safety (ex., "Don't take candy from strangers") and ways to ask for help in school, after-care programs, or kids' clubs. However, formal promotion for protection from hostile internet strangers – including trolls – is infrequent in comparison to in-person harassment prevention and may even be excluded completely from safety-themed, school-based lesson plans. Fostering protective and restorative strategies for children as they grow into an increasingly internet-dependent world could contribute to the creation of healthier internet communities in the future. In doing so, not only would a harasser and a victim be "taken off the market", but the prevalence of bullying and trolling might decrease in the future as well.

Ideally, such an intervention holds long-term implications for creating "healthier" internet communities. These "healthier" internet communities would likely be characterized by higher group cohesion in dealing with invading trolls and cyberbullies through a shared ability to understand and identify their behavior, as well as what serves as reinforcement for it. In addition, decreasing users' personal feelings of anxiety, depression, frustration, and rumination caused by online interactions might improve feelings of safety, confidence, preparedness, and agency. This would likely increase the frequency of non-victimizing posts and positive interpersonal communications in public forums, group chats, comments sections of articles or videos, and general social media.

Overall, the researchers strongly encourage extensive follow-up studies with larger participant pools to further explore these findings and implications. Current research shows that distress, anxiety, emotional disturbances, and prevalence of self-harm that result from hostile online interactions is a significant cause for concern. Given the growing inevitability of online interpersonal contacts with trolls and cyberbullies and no possible way to

fully eradicate the behavior, new coping skills are vitally needed for internet users, particularly vulnerable children and teens. While more research is needed, this novel approach to dealing with trolls and cyberbullies is intended as a step forward to healthier, more inclusive internet communities, increased wellbeing, and better preparedness for inevitably hostile internet culture.

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