



# Unresponsive or un-noticed?: Cyberbystander intervention in an experimental cyberbullying context



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## ARTICLE INFO

### Article history:

### Keywords:

Cyberbullying  
Cyberbystander  
Bystander intervention  
Deindividuation  
Direct  
Indirect

## ABSTRACT

With increasing reliance on computer-mediated communication, emergencies and negative communication will also increase. Nearly one-fifth of adolescents report being cyberbullied, and over 25% of those report multiple occurrences. Though important gains have been made to understand the adverse effects and possible risk factors of cyberbullying for victims and cyberbullies, most individuals (70%; [Pew Research Center, 2014](#)) online fall into a third group—cyberbystanders. This experiment tests the first step (i.e., cyberbystanders notice the cyberbullying incident) of the five-step Bystander Intervention Model in a virtual environment. Data were analyzed from 221 cyberbystanders who witnessed in real time multiple episodes of cyberbullying. Results confirm that noticing cyberbullying significantly predicts intervention, indirect or direct. Nearly 68% of participants noticed the cyberbullying, but only 10% directly intervened by engaging with the bully. Most participants (68%) intervened indirectly after the incident and threat were removed. Further research is necessary to understand other boundary conditions, and to test the remaining steps of the Bystander Intervention Model in a virtual environment. This model has been very effective in understanding and increasing bystander intervention in the real world. We hope that the model will have similar effects on understanding and increasing cyberbystander intervention in the virtual world.

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## 1. Introduction

Over 90% of 12–17 year olds access the Internet daily, and 80% use this access specifically for socializing and communicating with their peers ([Pew Research Center, 2011](#)). Access to the Internet, endless technological opportunities to record or forward any media, and an increasing reliance on social networking for communication have created a perfect environment for cyberbullies. The Centers for Disease Control have labeled cyber-aggression as an important public health issue, affecting millions of people daily ([David-Ferdon & Hertz, 2009](#)). Nearly 20% of American adolescents report being cyberbullied, and over 25% of those report that it happens repeatedly ([Hinduja & Patchin, 2013](#)). The childhood chant of ‘sticks and stones’ breaking bones but words never hurting rings hollow to the cyberbullying victim. In traditional bullying, victims are safe within the confines of their own home. In the 21st century, no adolescent or adult can avoid being caught in any cyber-corner.

The effects of cyberbullying victimization and perpetration are as numerous as they are negative ([Tokunaga, 2010](#)). However with

the sheer number of individuals online, most at some point would fall into a third group—cyberbystanders. Bystanders are individuals who “stand by” in emergency situations without intervening and giving aid. Cyberbystanders do this in the virtual world. The wider the audience or networks the cyberbullying images or text are distributed, the larger the population of possible cyberbystanders who can intervene.

### 1.1. Cyberbystander behavior

Cyberbystanders play crucial roles in cyberbullying and other acts of cyberaggression, such as hostile communication, called flaming ([Derks, Fischer, & Bos, 2008](#)); destructive deception called trolling ([Buckels, Trapnell, & Paulhus, 2014](#)); excluding people online, called cyberostracism ([Wolf et al., 2014](#)), and making online threats, called cyberthreats ([Salmivalli, Kärnä, & Poskiparta, 2011](#)). However, most people remain passive and silent, at least directly ([Huang & Chou, 2010](#)). In field studies, diffusion of responsibility is repeatedly observed ([Lynn Hawkins, Pepler, & Craig, 2001](#)), which can be especially difficult given the nearly infinite number of expected, observed, or assumed individuals “present” online. A reduction in the bystander effect was found when cyberbystanders were directly approached for help when experimenters used the

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cyberbystander's name (Markey, 2000). These participants, however, are no longer bystanders when directly approached, and become active participants in the emergency. In another study (Barińska, Szuster, & Winiewski, 2013) harassing photographs of a schoolmate were sent to a few adolescent peers. Participants (the recipients of these photographs) had options to report the harassment, forward the photographs, or tell the individual what wasn't right about their actions. The researchers found that when given the opportunity to engage as an active participant in forwarding harassment, cyberbystanders are more likely to do so online than offline. These participants could be considered more passive recipients than traditional bystanders.

## 2. Research framework

### 2.1. Bystander Intervention Model

For nearly four decades, the Bystander Intervention Model (BIM; Latané & Darley, 1970), depicted in Fig. 1, has helped explain the conditions under which individuals choose, or choose not to, help others in emergency situations. The model includes five key steps that must occur in order for a bystander to intervene: (1) notice that something is happening, (2) interpret the event as an emergency, (3) take personal responsibility for providing assistance, (4) determine actions necessary, and (5) provide help. This model has been replicated in field and laboratory studies in a myriad of situations involving (presumably) thousands of experimental and unwitting participants. The model proves useful, regardless of whether the situation is seemingly benign or extremely serious, and regardless of victim characteristics. It helps explain why most people do not intervene in an emergency.

This model has yet to be comprehensively tested in a mediated environment, especially in an environment where aggression and harassment takes place. It is necessary to test each step of the Bystander Intervention Model online to ascertain how similarly

cyberbystanders act online in comparison to offline. Confirmation of the ecological validity of the offline model in an online context can lend utility in other offline findings for eventual cyberbystander intervention. The main goal of the present study is to test the first step of this model in an online context.

To date, the thresholds of cyberbystanders have not been experimentally tested with certain variables important to the model constrained. Cyberbystander attributions (Holfeld, 2014) and behavior in cyberbullying has been examined, but not tested, through self-report surveys (Li, 2007; Vandebosch & Van Cleemput, 2009), behavioral intentions measured from scenarios (Bauman & Newman, 2013), or field experiments examining the bystander effect (Markey, 2000). Each of these studies assumed all cyberbystanders completed Step 1 of the Bystander Intervention Model, and had noticed the event. However, cyberbystanders who do not intervene may not do so because they did not actually notice the emergency, or not complete the very first step of the established Bystander Intervention Model. The present study aims to test the importance of noticing the online event, regardless of the distractions that can supply the cyberbystander with opportunities to avoid cyberintervention.

### 2.2. Direct and indirect interventions

Bystanders to emergencies and violence, be it on or offline, have four choices in actions: (1) direct intervention, (2) indirect intervention, (3) joining in, or (4) inaction. For a victim, as long as the emergency stops and assistance is granted, it is unimportant if the means of supplying help is direct or indirect. However, the difference in intervention can affect the aggressor as well as any other bystanders. Direct intervention occurs when the bystander successfully moves through the five steps of the Bystander Intervention Model and provides assistance. This assistance can be given promptly to the person in need (e.g., using a fire extinguisher in a fire), diffuses the situation (e.g., breaks up the fight), or removes a victim from the environment (e.g., evacuating from danger).

Indirect interventions, or detour interventions, “consist of reporting the emergency to the relevant authority rather than attempting to cope with it directly” (Latané & Darley, 1970, p. 35). Indirect interventions tend to be less straightforward and may involve more micro-decisions. Though once a bystander decides to intervene indirectly, “it usually does not require a great deal of skill, strength, or courage to carry it out” (p. 35). These circuitous actions are steps that lead to eventual steps that finally intervene on behalf of the victim, such as telling a teacher or reporting to administrators abusive language or threats. Direct interventions take more time, resources, and opportunities for the bystander than do indirect interventions.

### 2.3. Mediated interventions

Online, direct intervention is public communication addressing the emergency. Even in a deindividuated environment, interlocutors rely on typical interpersonal communication strategies in disclosure (Joinson, 2001; Tidwell & Walther, 2002), argumentation (Ainsworth et al., 2011; Lea & Spears, 1991), and relationship maintenance (DeAndrea, Ellison, LaRose, Steinfield, & Fiore, 2012; Lewandowski, Rosenberg, Jordan Parks, & Siegel, 2011). The textual persistence of computer-mediated communication (CMC) affords any slur, joke, or embarrassing video permanence (Slonje & Smith, 2007). By intervening, the cyberbystander becomes part of the narrative that can also go viral. No longer is the intervention in the moment, at that instant. The intervention can become timeless, happening over and over again whenever a new person views the communication. The social risk of intervening could be

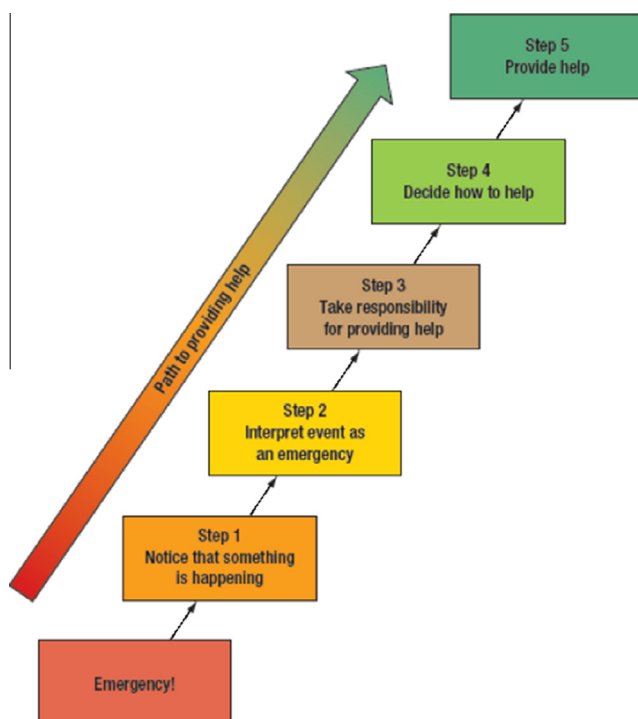


Fig. 1. Image illustrating steps of the Bystander Intervention Model (Latané & Darley, 1970).

considered infinite online since the audience and timeframe of the intervention are infinite. Due to the textual persistence of CMC, a single post online can go viral and either viewed or reposted multiple times, increasing the number of cyberbystander eligible to intervene.

In less ambiguous situations, when violence or aggression is present, bystander intervention has been found to be significantly inhibited. When solo, less than 35% of bystanders intervened in the obvious theft of a confederates' property (Shaffer, Rogel, & Hendrick, 1975). Bystanders typically do not intervene on behalf of a confederate when dealing with an aggressive individual compared to a tentative individual (Allen, 1972). While online, personal safety may not be at risk, but social well-being and evaluation of performance by others could be. In a cues-filtered out environment, individuals can misinterpret communication when there would be otherwise little room for interpretation. Receivers recognize senders have the affordance of self-selection, asynchronicity, and editing capabilities (Walther, Loh, & Granka, 2005). Direct intervention may be perceived as risky by the cyberbystander, but indirect intervention may be a suitable communication strategy given the virility of computer-mediated communication.

The present study aims to test the first step of the Bystander Intervention Model in an aggressive, mediated environment. It is expected the present study will replicate the Bystander Intervention Model where noticing an emergency is a significant predictor of action (Latané & Darley, 1970; Nickerson, Aloe, Livingston, & Feeley, 2014). Specifically, this research tests the following two hypotheses.

**H1.** Noticing the cyberbullying will significantly increase cyberbystander intervention.

In the mediated environment, indirect intervention choices should contain less social risk than direct intervention choices. For example, Facebook allows users to report posts in their newsfeed as inappropriate, aggressive, or spam (Facebook, 2014). A simple drop-down menu appears next to the post, and with a click, a cyberbystander uses an indirect intervention to reduce cyberbullying. However, these online indirect options may be less accessible or obvious than those offline. Self-efficacy, or the belief one can help in a meaningful way, is an important component of bystander intervention (Fischer et al., 2011). If cyberbystanders do not perceive the indirect intervention options as efficient, or that they have such options, it is unlikely they will be used. Therefore, the second hypothesis is:

**H2.** More cyberbystanders will choose indirect intervention more often than direct intervention.

The present research also attempts to answer two research questions.

#### 2.4. Multimedia distractions

Environmental and situational variables can distract bystanders from successfully completing the first step of the Bystander Intervention Model. Distractions such as obstructed views, loud noises, crowded environments, or bystanders' own multitasking have been found to decrease bystander intervention (Fischer et al., 2011; Latané & Nida, 1981). Technology use has been linked to increased multi-tasking, and can therefore increase the number of possible distractions (Zhang & Zhang, 2012). Three specific online distractions were chosen for the present study: (1) streaming music, (2) visual pop-ups, and (3) timer countdowns. Music has been found to negatively affect attention and comprehension (Dalton & Behm, 2007), create greater lags in vigilance tasks (Davies, Lang, & Shackleton, 1973), and affect the processing of

online information (Kallinen, 2002). Pop-up windows have been found to irritate and annoy users, and draw their visual attention from other tasks online (Bahr & Ford, 2011). Time constraints have been found to deplete cognitive resources and lead to rote, methodical choices (Ordóñez & Benson, 1997), and to affect the type of arguments users choose to use in online discussions (Reid & Hards, 1998). Therefore, we attempt to answer the following research question:

**RQ1.** To what degree, if any, do distractions account for the variance in any cyberbystander intervention?

#### 2.5. Communication strategies

Considering the dearth of research suggesting individuals comprehend, react, respond, and interact in mediated environments differently than offline environments (e.g., Walther, 2011), we do not expect strict replication of previous bystander intervention studies. Therefore, a key research question centers on the novel design and application of the Bystander Intervention Model in a mediated environment.

**RQ2.** Of cyberbystanders who choose to intervene directly, at what point, with whom, and with what strategies do they use?

### 3. Methods

#### 3.1. Participants and procedures

##### 3.1.1. Participants

Data were collected from 241 university students. We discarded the data from 20 suspicious participants. Thus, the final sample consisted of 221 participants ( $n = 154$  female, 69%;  $n = 154$  white, 69.7%;  $M_{AGE} = 20.03$ ,  $SD = 1.66$ ).

##### 3.1.2. Procedures

Each participant was lead to believe they would be piloting a new online support chat feature of the server used for online research surveys and studies. The purpose of this pilot was to test usability and whether undergraduate research participants would utilize such a support feature. A research assistant was available in the chat room for assistance with surveys while participants completed a series of personality assessments to test any interference with the chat application. All were told the research assistants (lead and chat monitor) involved in the experiment were receiving course credit for their work, and participant evaluations at the conclusion of the experiment would be sent direction the principal investigator as part of their grade.

At the 1/3, 2/3, and end survey points, participants were presented on-screen within the survey to write as such in the chatroom. These check-ins ensured the chat window remained on the screen so participants would have at least peripheral opportunities to see the conversations. A small sample of participants piloted the study without these prompts to observe how users interacted with this chat room ( $n = 15$ ). During the debriefing, participants were asked how they interacted with the chatroom, and 87% ( $n = 13$ ) reported they minimized the chatroom because it was "distracting." Therefore, the prompts were kept in the experimental design to ensure the chatroom was kept visible.

The cyberbullying of the 'other participant' began after 3 min. The confederate stated difficulty with a survey question, which elicited a response from the chat monitor (bully). The conversation continued with the chat monitor answering the confederate's questions in an increasingly aggressive manner. The chat monitor

concluded the conversation with an insulting remark and wrote, “figure it out yourself.” At no point in the experiment did the confederate victim address the rudeness. After an additional three minutes had passed, the ‘other participant’ had a different problem, and the harassment again. Throughout the experiment, the confederate posted benchmarks within 2 min of the participants’ benchmarks to continue the ruse that each ‘participant’ was completing the same questions. After all data were collected, all participants were thoroughly debriefed. All participants provided informed consent prior to participating. All procedures first approved by the Institutional Review Board per Human Subjects Guidelines.

### 3.1.3. Controls

A chatroom was specifically chosen as the means of CMC to mimic the synchronicity of offline bullying as much as possible. Communication appears on the screen almost instantaneously after the sender hits the return button. The IRC chat program used was entirely text based. The richness of the media was controlled to ensure only the communication used, and not its presentation, would be the manipulated variable (Biocca, Harms, & Burgoon, 2003). It has been found the richer the media, the more presence users experience when communicating in that environment. Physical presence was completely controlled as each participant completed the study in an enclosed room, alone with a computer. Reduced social presence has been found to reduce apprehension of evaluation of others and apprehension towards communicating with others (Griffith, Fuller, & Northcraft, 1998). All peripheral cues, such as windows flashing (typical of such programs), changing text color, and private user-to-user messaging were disabled for this experiment to make sure no undue attention was directed towards the chat room. Thus, if the cyberbullying was noticed, it was not due to any perceived or experienced affordances of the technology.

Specific variables that have been found to affect bystander intervention, such as diffusion of responsibility, relationship with victim (or aggressor), and virility were controlled. Participants were led to believe the number of individuals was kept constant in a private, closed chatroom: the bully, the victim, and the participant. Therefore, participants were the sole bystander in the online environment, and any communication made in the chatroom was kept private and had no chance of going viral. The number of individuals available to witness the cyber-bullying was kept 1:1 in order to control for diffusion of responsibility (Latané & Darley, 1968). Previous research has suggested the number of individuals present in a CMC environment can affect online helping behavior (Blair, Foster Thompson, & Wuensch, 2005). We recorded what time the participant opened the laboratory door to notify the lead researcher of issues, if he or she directly intervened. A funnel debriefing was used to determine if participants were suspicious.

### 3.1.4. Distraction conditions

Cyberbystanders in the present study were randomly assigned to one of six conditions: (1) no distractions, (control,  $n = 40$ ), (2) visual (pop-up advertisements,  $n = 50$ ), (3) audio (streaming music,  $n = 34$ ), (4) timed (time-constraint,  $n = 39$ ), (5) audio/timed combination ( $n = 36$ ), or (6) all distractions ( $n = 22$ ). All distractions were external technological distractions. Participants in the auditory distraction condition listened to streaming music on a Pandora station ([www.pandora.com](http://www.pandora.com)) of their choice through headphones. Participants in the visual distraction condition experienced pop-up advertisements of campus events every 30 s. A Java script was used to randomize photos of campus websites appearing as if they were from the web. Participants in the timed distraction condition were led to believe their survey may close after 20 min.

## 3.2. Intervention choices

### 3.2.1. Direct intervention

Chat transcripts were captured for each participant and analyzed for any engagement. Participants who engaged in the chatroom pointing out spelling errors, asking for clarification on semantics of survey items and the survey-directed “check-ins” were not considered direct intervention. Any communication directed towards the confederate (victim) or research assistant (bully) or a non-present other in relation to the cyberbullying conversation occurring was coded for direct intervention. Participants also had three indirect options: (1) call the lead researcher’s attention to the cyberbullying, (2) report after the experiment’s conclusion, and (3) evaluate the others in the experiment as part of their grade. This specific indirect behavior mimics many bullying interventions in schools (Cassidy, Jackson, & Brown, 2009), or whistleblowing options (Bjørkelo, Einarsen, Nielsen, & Matthiesen, 2011).

In order to understand the actual strategies employed by the cyberbystanders in this experiment and answer the second research question, rates of these specific indirect intervention strategies were calculated and compared at more granular levels. Previous research relied on post hoc self-report of cyberbystander as to the content of their intervening messages (Macháčková, Dedkova, Sevcikova, & Cerna, 2013). Without the actual communication available in the moment, it is difficult to understand the strategies employed by intervening cyberbystanders. Communication entered in the chatroom was coded for whom the message was intended (bully, victim, non-present other), the general valence of the message (inventory, commentary, or other), and how many comments were made and at what point of the cyberbullying (first instance, second instance).

If the intended recipient was not explicitly addressed, comments were coded according to where in the discursive turns they appeared. For example, a comment “its okay, read the direction carefully one more time,” immediately following the victim’s question to the chat monitor was coded as intended for the cybervictim. Comments addressing the distractions or misspellings were not considered direct interventions. After a coding schema was developed, two coders were trained using a random 10% of transcripts including some sort of engagement. Once Cohen’s Kappa reached .80, the remaining sample was independently coded.

### 3.2.2. Indirect intervention

Indirect interventions included evaluations of the participating individuals (lead and assistant researchers), the chat support system as a whole, and recommending the chat support system to future participants. Prior to any evaluative questions posed to participants, the chatroom function was closed. Evaluations of the research assistants included performance in role, respectful manner, professionalism, positive attitude, motivation, interpersonal skills, helpfulness, and orderliness. Participants were asked to provide an overall grade on a scale from A (4.0) to D (1.0) for the target’s overall performance, as well as in comparison to other experiences they had as a research participant. Cumulative scores were calculated to determine a comprehensive evaluative score for both the lead researcher and research assistant, with lower scores indicating more negative evaluations. An additional measurement of indirect intervention was the participant’s recommendation of the chat support function to future participants on a scale from 0 (*Strongly Do Not Recommend*) to 3 (*Strongly Recommend*). During the debriefing process the lead researcher asked participants for “any comments or observations that would be useful for us to know about the experiment today,” in order to provide an opportunity for another indirect intervention.



## 4. Results

### 4.1. Hypothesis testing

Based on the Bystander Intervention Model, it was expected cyberbystanders would need to notice the cyberbullying in order to intervene in the situation. First, measurements of noticing, direct, and indirect intervention were analyzed. In general, the majority of participants reported noticing the event in the chatroom (67.9%,  $n = 150$ ). Direct intervention was measured by communication made directly to the bully (chat monitor), victim (other participant), or the lead researcher (face-to-face). A total of 23 participants (10.4%) directly intervened. The likelihood of direct intervention is 4.62 times greater if a cyberbystander notices the cyberbullying,  $\beta = 1.726$ ,  $SE = .755$ ,  $p = .022$ ,  $\chi^2(1, 221) = 7.891$ ,  $p = .022$  (see Table 1).

Indirect intervention was measured by poor evaluations of the cyberbully and lower recommendations of the chat support feature to other participants. Noticing the cyberbullying significantly predicted indirect intervention against the chat monitor,  $\beta = -1.26$ ,  $t(219) = -5.6$ ,  $p < .001$ , where individuals who noticed the cyberbullying rated the chat monitor (bully) significantly worse ( $M = 1.12$ ,  $SD = 1.55$ ) than those who did not notice the cyberbullying ( $M = 2.46$ ,  $SD = 1.58$ ). Evaluations of the chat system itself, another means of indirect intervention, was also significantly predicted by noticing,  $\beta = -.56$ ,  $t(219) = -5.04$ ,  $p < .001$ . Individuals who noticed the cyberbullying rated the chat support significantly worse ( $M = 1.26$ ,  $SD = 0.85$ ) than those who did not notice the cyberbullying ( $M = 1.82$ ,  $SD = 0.54$ ). Completion of the first step of the Bystander Intervention Model, noticing the emergency, accounted for 12.7% of the variance in cyberbullying evaluations,  $F(1, 217) = 31.31$ ,  $p < .001$ , and 10.4% of the variance in evaluations of the chat support system,  $F(1, 218) = 25.36$ ,  $p < .001$ . These findings support Hypothesis 1.

Hypothesis 2 predicted that cyberbystanders would employ more indirect intervention strategies compared to direct ones. Of the 221 cyberbystanders, only 10.4% ( $n = 23$ ) directly intervened compared to 88.24% ( $n = 198$ ) of cyberbystanders who did not directly intervene,  $z = 14.76$ ,  $p < .001$ . As expected, fewer cyberbystanders directly intervened. The majority of participants who did intervene used indirect intervention. However, cyberbystanders who directly intervened were more severe in their evaluation of the bully ( $M = 0.55$ ,  $SD = 1.19$ ) compared to those who did not directly intervene ( $M = 1.73$ ,  $SD = 1.67$ ),  $t(217) = 3.19$ ,  $p = .002$ ,  $d = 0.43$  but did not significantly differ in their evaluations of the chat system,  $t(217) = 1.595$ ,  $p = .112$ .

Only one participant notified the lead researcher of the poor treatment of the other participant in the chatroom during the actual study. After commenting seven times in the chatroom, the participant opened the laboratory door and reported the incident. The participant said she refused to continue the survey if she "had to be in the same chatroom with someone who treats people

so horribly." The participant was so upset that she did not want to continue the study, and was therefore immediately debriefed.

### 4.2. Research questions

#### 4.2.1. Distraction effects

Previous research has suggested media such as music (Davies et al., 1973), pop-up advertisements (Bahr & Ford, 2011), and time restraints (Reid & Hards, 1998) can consume cognitive resources and distract attention. The first research question asked how external, mediated distractions would affect cyberbystanders' noticing of the events and intervention, both direct and indirect. Rates of noticing the cyberbullying were compared across distraction conditions, and in general there were no differences in noticing or intervention (see Table 1). In general, the majority of participants in each condition reported noticing the cyberbullying. 75% ( $n = 30$ ) participants who had no distractions, 64% ( $n = 32$ ) of those with pop-up advertisements, 53% ( $n = 18$ ) of those listening to music, and 77% ( $n = 30$ ) of those under a presumed timed constraint reported noticing the cyberbullying in the chatroom. A Pearson chi-square analysis comparing these proportions suggests no differences of noticing the cyberbullying across distraction conditions,  $\chi^2(5, 221) = 7.37$ ,  $p > .19$  (see Table 1).

#### 4.2.2. Communicative strategies

The second research question asked what communicative strategies were employed by those cyberbystanders who did directly intervene. Thirty-six participants made a total of 90 comments during the experiment. Of these, 64.44% ( $n = 58$ ) were direct intervention, 23.33% ( $n = 21$ ) were general commentary pointing out spelling errors in the survey or complaining about the distractions, and 5.56% ( $n = 5$ ) were general emotional responses, such as "LOL" which were difficult to parse into one of the other two categories. The number of comments per cyber-bystander ranged from 1 to 7. Significantly more participants wrote direct intervention comments ( $n = 23$ ) specifically related to the cyberbullying than those who wrote general ( $n = 10$ ) or other types ( $n = 3$ ) of comments,  $\chi^2(2, 36) = 17.17$ ,  $p < .001$ . Of those comments coded as direct intervention, 29 were directed towards the bully, 18 towards the victim, and 11 towards a non-present other (see Table 2).

Significantly more cyberbystanders chose to speak to the bully ( $n = 15$ ) compared to the victim ( $n = 7$ ), or a non-present other ( $n = 3$ ),  $\chi^2(2, 25) = 8.96$ ,  $p = .011$ . An ANOVA suggests cyberbystanders used a higher mean number of comments when addressing the bully ( $M = 3.27$ ,  $SD = 1.67$ ,  $n = 29$ ) compared to those sent to a non-present other ( $M = 3.00$ ,  $SD = 2.00$ ,  $n = 18$ ), or victim ( $M = 1.29$ ,  $SD = 0.49$ ,  $n = 11$ ),  $F(2, 25) = 4.34$ ,  $p = .026$  (see Table 3). All pairwise comparisons were significant using a Tukey's Honestly Significant Difference Test (HSD). The most common intervention tactic used by cyberbystanders was to reprimand the bully ( $n = 17$ , 58.62%), indicating the cyberbystanders recognized the power imbalance between cyberbully and cybervictim. Examples of these reprimands included comments such as: "How are you being helpful at all right now?" and "Why don't you just explain it to N416 since it's kinda your job?" Cyberbystanders appeared willing to insult the chat monitor, using reprimands and other comments. A total of 7 comments (24.14%) were insults, such as "RA, bye, I can smell the odor of loser from you. Haha" and "is their [sic] anyone else that can actually offer input instead of just being an asshole?" Other comments tried to come to the defense of the cybervictim, such as "hey it's not their fault there are technical difficulties!" and "This person is only asking for help." Only one individual explicitly stated plans to use indirect interventions: "I will be letting the staff here know how unprofessional and rude you are."

Cyberbystanders offered technical assistance and social support to the cybervictim. Fifteen comments were explicit suggestions to

**Table 1**  
Number of cyberbystanders who noticed cyberbullying, directly, indirectly intervened.

	Noticed cyberbullying		Test statistic
	Yes	No	
Direct intervention	23	198	$\chi^2 = 6.464^*$
<i>Indirect intervention</i>			
Bully evaluation	$M = 1.99, SD = 1.55$	$M = 2.46, SD = 1.58$	$t = 5.60^{**}$
Chat evaluation	$M = 1.36, SD = 0.85$	$M = 1.82, SD = 0.54$	$t = 5.04^{**}$

\*  $p < .05$ .

\*\*  $p < .01$ .

**Table 2**  
Rates of noticing cyberbullying, direct intervention by distraction condition.

	Noticed cyberbullying		Directly intervened
	Yes	No	
No distraction	30	10	5
Pop-up	32	18	4
Music	18	16	3
Timer	30	9	4
Music and timer	23	13	5
All distractions	17	5	2

$\chi^2(2, 36) = 17.17, p < .001$ .

**Table 3**  
Number of direct cyberbystander intervention comments, mean by cyberbystander.

Intervention comments	<i>n</i>	Mean number of comments
Bully (chat monitor)	29	3.27 <sup>a</sup>
Victim (other participant)	18	1.29 <sup>b</sup>
Non-present other	11	3.00 <sup>a</sup>

$F(2, 24) = 4.339, p = .026$ .

Superscripts refer to within-column comparisons. Means having the same superscripts are not significantly different at the .05 significance level using a Tukey's Honestly Significant Difference (HSD) Test.

help the presumed other participant with their issues with their survey, such as “*oh, there may be some error in the system I think*” or “*maybe try refreshing it.*” Others suggested the victim open their laboratory door to talk to the lead researcher or “*just skip it, you’ll be fine.*” Only one comment contained a compliment towards the victim: “*I’m sure you’re smart!! You’ll get it.*”

## 5. Discussion

The present study aimed to test the first step of the Bystander Intervention Model (Latané & Darley, 1968, 1970) in a mediated environment and determine if it predicted rates of direct and indirect cyberinterventions. A unique experimental design employing a chatroom technology was successful in deceiving participants to believe that they witnessed cyberbullying. This design is currently being used to test the remaining steps of the original Bystander Intervention Model (Latané & Darley, 1970) and to determine boundary conditions using newer computer-mediated communication theories. As in offline studies, it was expected noticing would lead to direct and indirect interventions. Noticing significantly predicted cyberbystander intervention, finding those who notice are four times as likely to intervene compared to those cyberbystanders who did not notice. Confirmation of this important first step in cyberbystander intervention suggests the application of the original model in a computer-mediated setting is appropriate.

The ratio of cyberbystanders who directly intervened in the present study was near the proportions of those bystanders in the original field and lab experiments (Fischer et al., 2011). It was expected cyberbystanders would prefer to engage in indirect interventions compared to direct interventions. Though direct intervention could have given participants license to evaluate the bully less harshly, the data suggest they continued their intervention through indirect methods. In offline situations, direct interventions are the most obvious options for bystanders, but can increase physical and social risk. Direct cyberintervention could also increase the social risk to the cyberbystander, but physical harm is limited, at least immediately. Indirect interventions, on the other hand, might require more resources, such as time, knowledge, and access to external help. In the cyber-environment, like the chatrooms used in this study, indirect interventions took little

to no extra resources and were readily accessible. The indirect cyberinterventions, such as evaluating the behavior of the bully and thereby notifying the supervisor of behaviors, and evaluating the chat support feature overall, were the most used options. In relation to real-life bullying, peers evaluating bullies poorly in relation to non-bullying peers can be a powerful cultural norm. However, these norms may not be effective if the bully, victim, or even other bystanders are not aware of these evaluations.

Previous offline studies have found environmental distractions cause bystanders to fail to notice emergencies. The present study aimed to understand if online distractions, such as streaming music, pop-up advertisements, or time restrictions would cause cyberbystanders to fail to notice cyberbullying. The tested distraction conditions did not have any affect on cyberbystanders noticing the emergency. Additionally, rates of both indirect and direct intervention were not significantly different in any distraction or combination of distractions conditions. Further research is necessary to determine if purposeful distractions, those specific to the reason the user is engaging with the medium, can affect cyberbystander attention or rates of noticing cyberbullying. For example, do the photographs in a social media feed distract cyberbystanders from noticing textual cyberbullying in that same feed?

The communication strategies employed by the 10% of cyberbystanders who directly intervened were interesting. Most cyberbystanders preferred to direct their communication towards the aggressive chat monitor, reminding him of his duty to assist participants. One of the reasons cyberbystanders may not intervene could be the expectation to enforce the dynamic in the chatroom. If cyberbystanders believe they have to stand up to someone aggressive that is clearly shirking his job responsibilities, they may morally disengage (Bandura, 1990), explaining non-intervention due to displacement of responsibilities. Additionally, most direct intervention communicated to victims was in the form of technical assistance. It is possible other cyberbystanders thought to intervene, but did not because they had no specific suggestions they deemed helpful. In short, because cyberbystanders are not in charge of enforcing the rules or do not have the technical knowledge necessary, they may choose non-intervention.

## 6. Conclusion

Future research is necessary to understand the decision processes of cyberbystanders who directly intervene compared to those who employ indirect interventions. It is possible specific moral disengagement strategies, such as displacement of responsibility (e.g., it is not my job), moral justification (e.g., this is typical for the Internet), and euphemistic labeling (e.g., it is only words) are utilized by cyberbystanders to explain non-intervention. In the present study, the number of cyberbystanders was kept consistent and the cybervictim never addressed the cyberbully or any direct intervened. It is possible cyberbystanders, like bystanders offline, rely on victim communication or reactions of others in order to interpret the situation. The cyberbystanders in the present study may not have directly intervened because they did not have the necessary information to interpret the cyberbullying as an emergency needing intervention. We are currently testing this threshold and the decision strategies used by cyberbystanders. Other experiments testing the subsequent steps in the Bystander Intervention Model are also underway.

In one survey, over 90% of adults 18–60 and 93% of teens and adolescents reported using communication technologies and their daily interactions (Lenhart, Purcell, Smith, & Zickuhr, 2010). This access affords users the opportunity to serve as cyberbystanders to a variety of negative cyber-events. More investigation is necessary, but in the 21st Century this initial study can serve as a good

first step towards understanding useful and accessible strategies to combat cyberbullying.

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