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Reference:

DeSmet Ann, De Bourdeaudhuij Ilse, Walrave Michel, Vandebosch Heidi.- Associations between bystander reactions to cyberbullying and victims' emotional experiences and mental health
Cyberpsychology, behavior, and social networking - ISSN 2152-2715 - 22:10(2019), p. 648-656
Full text (Publisher's DOI): <https://doi.org/10.1089/CYBER.2019.0031>
To cite this reference: <https://hdl.handle.net/10067/1637660151162165141>

Associations between bystander reactions to cyberbullying and victims' emotional experiences and mental health

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Accepted for publication in Cyberpsychology, Behavior and Social Networking, 5 Sept 2019

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Acknowledgements

This work was supported by the Flemish agency for Innovation by Science and Technology (grant number 110051, 2012-2016). Ann DeSmet was supported by a Research Foundation Flanders fellowship (grant number FWO16/PDO/060, 12H6717N, 2016-2019). The funding agencies had no role in study or manuscript design.

Disclosure statement

The authors declare no competing interests

Abstract

Introduction. Bystanders in cyberbullying may play a crucial role in reducing cyberbullying's harm for victims. This study assessed bystander responses, and the associations with adolescent victims' emotional reactions to cyberbullying and victims' mental health outcomes (symptoms of depression, anxiety and stress; suicidal ideation). **Methods.** A total of 1037 adolescents (49.8% female, mean age=15.17 years) participated in the cross-sectional study and filled out an anonymous questionnaire. Victimization was measured with a single-item scale (cybervictims) and a multiple-item scale with cyberbullying examples (youth experiencing offensive practices). Associations of positive (e.g. defending) and negative (e.g. ignoring) bystander responses with victims' emotions (8 types of emotions rated on 5-point Likert scale) were assessed via correlations; and with victims' mental health outcomes (DASS-21, single item for suicidal ideation) using regression analyses, adjusting for the influence of gender and coping styles (KIDCOPE). **Results.** Cybervictims (single-item scale) showed more victimization experiences, and more negative emotional and mental health outcomes than youth only experiencing offensive practices. Negative bystander responses predicted some mental health outcomes among cybervictims, but not among youth only experiencing offensive practices. Positive bystander behavior did not predict any mental health outcome. **Conclusion.** There is a clear need for cyberbullying prevention programs to include components that target bystander responses, to alleviate victims' emotional and mental health harm after cyberbullying. Attention is needed to create effective programs to reduce negative bystander behavior, while most current programs are focused on positive bystander behavior.

1. Introduction

Bullying is an intentional and repeated act to hurt, socially isolate or cause distress to a victim, where the perpetrator has more power than the victim¹. This may occur repeatedly or result in repeated harm^{2,3}. 'Traditional' or 'offline' bullying takes place via face-to-face contact, whereas cyberbullying takes place via new digital media⁴. Large variations exist in prevalence rates of cyberbullying involvement among youth^{2,3,5-9}, with rates synthesized in a meta-analysis to resp. 15%-16% for cyberbullying victimization and perpetration¹⁰. Cyberbullying victimization peaks among 12-15 year olds². Cyberbullying is less common than traditional, offline bullying¹⁰, but there is a degree of overlap between victimization from cyberbullying and traditional bullying, ranging from 38%-85%^{9,11-13}. Victims of cyberbullying experienced a variety of problems, including feelings of depression, anxiety, suicidal ideation and behavioral problems¹⁴. Despite lower prevalence rates, cyberbullying victimization is assumed to lead to more severe psychosocial effects than traditional bullying². Especially with suicidal ideation, the association with cyber-victimization seems stronger than with traditional bullying victimization^{15,16}. Victimization and perpetration are, furthermore, not mutually exclusive roles: around one third of cyber-victims were reported to also have cyberbullied someone. Bully-victims of cyberbullying and victims of both types of victimization suffer the most¹⁷⁻²¹. Given the substantial prevalence and harm related to cyberbullying victimization, actions that may end its occurrence or harm are direly needed.

In traditional bullying, it is advocated to consider bullying as a group process in which bystanders play a key role^{22,23}. Bystanders may end the bullying or reduce its harm by reporting it to adults, by comforting or defending the victim. This undermines the bully's power, negatively reinforces the bully's actions²³ and strengthens the victim's mental resilience²⁴. By contrast, joining and assisting (e.g., forwarding, adding nasty comments), and reinforcing (e.g., laughing) can provide positive reinforcement to the bully²³ and as such sustain or aggravate the bullying^{23,25}. Also passive bystanding (e.g., ignoring it) provides positive feedback to the bully, since the bully and victim may consider this as a silent form of approval of the bullying²⁶.

As in traditional bullying, targeting bystanders may be successful to end cyberbullying and its harm, since bystanders witnessed the majority of cyberbullying cases²⁷ and peer approval was a key driver for

cyberbullying perpetrators²⁸⁻³¹. In cyberbullying, research on bystander behavior has, however, mainly focused on determinants of bystander behavior³². So far, little research has examined which effect bystander behavior has in cyberbullying on the harm experienced by the victim. One study examined the associations between bystander responses and victims' self-reported impact on emotional and physical health and academic achievement³³. A positive association was found between bystanders' negative behavior (e.g. 'joining in or laughing and making it worse for the victim') and cyberbullying's perceived negative emotional (e.g. feeling angry or sad) and physical health impact (e.g. headaches) on the victim. However, no associations were found between positive bystander behavior and the victim's emotions or physical health. From this research, it is yet unknown how severe the impact on mental health is, since such emotional experiences may be transitory and not sufficient to accumulate in low positive well-being³⁴. Research is therefore needed that uses validated scales for more global indications of mental health among victims.

This study aimed to assess: 1) how victims perceived bystanders' responses after being cyberbullied; 2) whether bystander responses were associated with victims' emotional experiences to cyberbullying; 3) whether bystander responses predicted levels of depression, anxiety, stress and suicidal ideation experienced by cyberbullying victims, taking victims' gender and individual coping styles into account.

2. Methods

Sampling and procedure

A random sample of secondary schools in <region info blinded> were contacted (n=26) based on a government database of schools; eight participated (12 declined; 5 no response; 1 drop-out before start). Data were collected among grades 7-12 (aged 12-18) at school, during one class hour. The anonymous paper-and-pencil survey was administered by the researchers. Adolescents provided active informed consent, parents provided passive informed consent. The study received approval from the Ethics Committee of the "affiliation information blinded" University Hospital (2012/307).

Measurements

Bullying involvement

Questions on bullying involvement were preceded by a definition of bullying based on Solberg and Olweus (2003) (see Appendix). Cyberbullying victimization was measured by a single-item 5-point rating scale, reflecting victimization ‘via text message or Internet’ in the past 6 months (i.e. a school semester). Both single-item scales and multi-item scales can be recommended depending on the purpose (e.g. assess cyberbullying prevalence, capture the complexity)³⁵. Therefore, a list of 11 specific forms of cyberbullying victimization was used immediately following the 1-item scale (5-pt Likert scale, $\alpha=.81$, see Appendix). These were rated on the same scale as the single-item scale. Psychometric information is reported elsewhere³⁶. Questions on bystander responses and victims’ emotional experiences to cyberbullying were only asked to those cybervictimised at least once in the past 6 months (single-item or multi-item scale).

Bystander reactions

One question assessed what the victim perceived others did when the victim was cyberbullied. Bystander responses included: they 1) laughed at it; 2) supported me by giving advice; 3) comforted me; 4) told the bully to stop; 5) joined in with the bully; 6) told an adult to help me; 7) told or forwarded it to others to hurt me more; 8) ignored it and pretended it did not happen. Items were rated on a 5-point scale (‘no-one’, ‘a few’, ‘about half of them’, ‘many’, ‘everyone’). The list of bystander responses was based on qualitative³⁷ and quantitative research³⁸. Regression analyses assume predictors do not show multi-collinearity; and restricts the number of predictors to be used in relation to sample size. Consequently, the items of bystander responses were reduced to fewer predictors via Principal Component Analysis. To achieve mutual independence of predictors and avoid multi-collinearity, a Varimax rotation was applied. Factor analysis yielded two factors (explained variance 64.76%). Items are shown per factor (rotated factor loadings between brackets): 1) *supportive bystander reactions* ($\alpha=0.83$), consisting of giving advice (0.89), comforting (0.88), telling the bully to stop (0.84) and reporting to an adult (0.62); and 2) *negative bystander reactions* ($\alpha=0.75$), consisting of laughing at it (0.86), joining the bully (0.82), forwarding to others (0.81) and ignoring it (0.60).

Victims’ emotional experiences

Victims rated on a 5-point scale (completely disagree to completely agree) which emotions they experienced in relation to being cyberbullied: 1) was angry; 2) felt embarrassed; 3) felt sad; 4) was scared; 5) felt lonely; 6) felt helpless as if no-one could help me; 7) felt I could no longer trust anyone; 8) felt guilty, felt it was all my fault. The list of emotions resembled that used in prior research³³, but additionally included emotions indicative of depression and suicidal ideation (loneliness, helplessness, guilt)^{39,40}.

Coping styles

The 10-item generic coping scale KIDCOPE for adolescents measured adaptive (e.g. talk to others, $\alpha=0.65$) and maladaptive coping (e.g. blaming themselves, $\alpha=0.57$) responses⁴¹. Since adolescent's coping style may affect their emotional response and mental health in relation to stressful situations⁴², this variable was entered in regression analysis as a potential confounder.

Mental health

The Depression, Anxiety, Stress scale (DASS-21) measured mental health problems. The DASS-21 scale consists of 7 items for each subscale and is a validated scale for adolescent mental health outcomes⁴³. Total scores per subscale were thus used as dependent variables. Reliability of subscales was high ($\alpha_{\text{depression}}=0.90$; $\alpha_{\text{anxiety}}=0.84$; $\alpha_{\text{stress}}=0.87$). Suicidal ideation was measured by one item ('having had suicidal thoughts in the past 6 months'), rated on a 5-point Likert scale. These questions were adapted from the Health Behaviour in School-Aged Children (HBSC) study. Content validity was assessed in consultation with the Expertise Centre for Suicide Prevention and suicide hotline in *<region info blinded>*. Given the skewed distribution for suicidal ideation, this variable was dichotomized into 'never' and 'at least once' in the past 6 months.

Analysis

Descriptive statistics (RQ1), bivariate Pearson correlations (RQ2) and regression analyses (RQ3) were conducted with SPSS version 25. Gender and coping styles were entered in regression analysis as known covariates of mental health outcomes^{42,44}. Non-significant predictors were removed stepwise to attain

parsimonious models. Results are reported on parsimonious models. Collinearity diagnostics were conducted examining variance inflation factor (≤ 10) and tolerance (≥ 0.1).

3. Results

A total of 1062 adolescents participated in the study (response rate: 99.5%). Twenty-five participants were removed from analyses due to incomplete or satisficing answers (e.g. ticking the same box for all items in a scale where variation is expected due to negative-positive phrasing, or opposites in consecutive items). The analyzed sample consisted of 1037 adolescents (49.8% female, mean age=15.17 years). Seven percent ($n=76$) indicated having been a victim of cyberbullying (single-item scale) at least once in the past 6 months. On the multi-item scale of cyberbullying victimization, 23% ($n=233$) had experienced at least one type of cyberbullying victimization, at least once in the past 6 months, but did not indicate having been a cyberbullying victim on the single-item scale. Although we intended the multi-item scale to complement the identification of cyberbullying victims and consider all as cyberbullying victims, we noticed qualitative differences between youth responding positively to the single-item and multi-item scale. Youth indicating they had been victimized on the single-item scale, had experienced more forms of cyberbullying, experienced more negative emotions and mental health issues than those who only claimed to have been victimized when prompted with examples of cyberbullying (multi-item scale). Although both scales mentioned 'bullying via Internet or SMS', possibly youth who only reported to have been victimized after being prompted with examples, did not consider this experience as cyberbullying, because they were able to defend themselves, because it happened infrequently, or because they did not suffer as a result. Earlier studies showed youth made a distinction between cyberbullying and experiencing potentially offensive internet and mobile phone practices (POP)^{4,45}. For this reason, both groups were analyzed separately and referred to as cybervictims (single-item scale) and youth with POP-experiences (multi-item scale).

Positive bystander responses occurred most often (giving advice, comforting, telling the bully to stop), both among cybervictims (Table 1) and youth with POP experiences (Table 2). Both groups most often felt angry and sad. Negative emotions were significantly stronger among cybervictims than among youth with POP experiences (except for anger, Table 3). There were no significant differences between

cybervictims and youth with POP experiences in the degree of positive or negative bystander behavior they perceived, in their coping styles, or in their levels of stress. There were significant differences in levels of depressive symptoms and anxiety: cybervictims experienced more depressive symptoms and anxiety than youth with POP experiences. Cybervictims experienced more types of cyberbullying than youth with POP experiences (Table 3).

There were significant correlations between negative emotional experiences and negative bystander responses, except for with anger and guilt (Table 1-2). Among cybervictims, correlations with negative emotions were strongest when bystanders had joined the bully, whereas correlations with negative emotions were strongest among youth with POP experiences when bystanders had laughed at it. Positive forms of bystander responses showed no significant correlations with the negative emotional experiences of cybervictims. For youth with POP experiences, feeling scared and lonely significantly correlated with bystanders reporting the incident to an adult; and feeling angry significantly correlated with bystanders giving advice.

Regression analyses next examined whether negative or supportive bystander responses could predict victims' mental health problems. Among cybervictims, only negative bystander behavior ($\beta=0.38$, $p=.004$) significantly predicted depressive symptoms ($\text{adj.}R^2=0.13$, $F(1, 55)=9.17$, $p=.004$). Negative coping styles ($\beta=0.26$, $p=.020$) predicted anxiety ($\text{adj.}R^2=0.06$, $F(1, 71)=5.32$, $p=.024$). Negative coping styles ($\beta=0.30$, $p=.010$) predicted stress symptoms ($\text{adj.}R^2=0.08$, $F(1, 71)=6.97$, $p=.010$). Negative bystander behavior ($OR=2.60$, 95% CI 1.16, 5.82, $p=.021$) and negative coping style ($OR=9.92$, 95% CI 1.82, 54.08, $p=.008$) explained 33% of suicidal ideation ($-2LL=62.67$, $\chi^2(2)=15.91$, $p<.001$). Positive bystander behavior did not significantly predict any mental health outcome. Among youth with POP experiences, for three mental health outcomes (depression, stress and anxiety), only negative coping style was a significant predictor: 1) negative coping style ($\beta=0.41$, $p<.001$) predicted depressive symptoms ($\text{adj.}R^2=0.17$, $F(1, 229)=47.37$, $p<.001$); 2) negative coping styles ($\beta=0.37$, $p<.001$) predicted anxiety ($\text{adj.}R^2=0.14$, $F(1, 230)=37.37$, $p<.001$); and 3) for stress, negative coping styles ($\beta=0.37$, $p<.001$) was a significant predictor ($\text{adj.}R^2=0.13$, $F(1, 230)=35.32$, $p<.001$). Both positive coping styles ($OR=0.37$, 95% CI 0.21, 0.66, $p=.001$), negative coping styles ($OR=3.97$, 95% CI 2.08, 7.68, $p<.001$),

and gender (OR=0.52, 95% CI 0.28, 0.96, p=.037) significantly predicted suicidal ideation (-2LL=270.01, $\chi^2(3)=30.80$, p<.001), explaining 17% of variance. Neither positive or negative bystander behavior significantly predicted any of these outcomes.

4. Discussion

This study assessed associations between bystander responses to cyberbullying and emotional experiences and mental health outcomes of youth that had been cyber-victimized or experienced potentially offensive internet and mobile phone practices (POP). We differentiated between youth who had been cyber-victimized (single-item scale); and those with POP experiences but who did not indicate to have been cyber-victimized on the single-item scale. Both groups experienced negative emotions after being cyberbullied, especially being angry and sad, but cybervictims experienced significantly higher levels of negative emotions than youth with POP experiences. They also experienced more depressive and anxiety symptoms.

The issue of differences in rates and experiences between single-item and the multi-item POP scale touches upon measurement difficulties to capture cyberbullying victimization. In cyberbullying, using multi-item scales appears to yield higher prevalence rates than single-item scales^{6,46}, possibly due to not all included items being considered as bullying by youth^{5,35}. The choice of single-item or multi-item scales should depend on the purpose of the study and combining both single- and multi-item scales may be advised³⁵. Consistent with earlier research showing different profiles (e.g. social skills and networks) between victims of POP and cyber-victims⁴, our findings showed qualitative differences between single-item and multi-item scale results, and indicated that the single-item cyberbullying victimization scale was better able to discriminate between those who suffered from the experience and those who did not, than the multi-item (POP) scale. This is an important aspect of validity (‘known group methods’⁴⁷). Bullying studies tend to report scale reliability but attention to validity is often lacking⁵. We propose more emphasis is needed on scale validity in real-life situations, by discriminating between those who do and do not need support. Based on our findings, we assume single-item scales may outperform multi-item scales in this respect.

We observed significant correlations between negative bystander behavior and negative emotional experiences after being cyberbullied, but few significant correlations with positive bystander behavior. Regression models similarly showed negative bystander behavior predicted levels of depression and suicidal ideation, but not anxiety and stress, and only among cybervictims. No significant predictions were found in regression analyses for positive bystander behavior on any outcome. Significant predictions for negative emotions for victims by negative but not positive bystander behavior align with earlier study findings³³. Our findings show that this is not only the case for potentially transitory emotions, but also for more severe mental health outcomes. Possibly, as in social perception, negative peer responses that may convey anger or disgust, are more noticed and harder to withdraw our attention from than positive peer responses^{48,49}. Future research may delve deeper into how this positive bystander behavior took place and which relations may be found with how victims experienced this. For example, possibly the particular person providing support, how often and by how many people positive bystander responses are provided (dose-response relation), the time elapsed since the incident, and the empathy conveyed in the response, are all important aspects in how the bystanders' response may alleviate victims' negative emotions. Current research into bystander responses in cyberbullying has mainly focused on factors predicting bystander responses³². To better inform interventions, research is needed in how bystanders can best communicate their positive bystander response to provide emotional support to the victim.

Our study was cross-sectional and the direction of associations cannot be determined. It is possible that victims' emotional way of responding to cyberbullying affects how bystanders respond. For example, correlations between victims showing more fear and more positive bystander behavior (i.e. reporting to an adult among youth with POP experiences), may be explained by an empathic reaction of bystanders to seeing victims' negative emotions. It is indeed also possible that adolescents who displayed more depressive symptoms elicited more negative bystander responses. Holfeld et al. reported that bystanders were less likely to act against cyberbullying when victims used avoidant coping strategies and tried to ignore the cyberbullying experience⁵⁰. The use of avoidant coping strategies has been associated in previous studies with higher levels of depressive symptoms and stress in relation to traditional and

cyberbullying victimization⁵¹⁻⁵⁴. Our findings showed that only negative bystander behavior remained a significant predictor of cybervictims' depressive symptoms, whereas victims' maladaptive coping styles were not significant. For suicidal ideation, both negative bystander behavior and negative coping styles were significant predictors, but only among cybervictims. Among those having POP experiences, bystander behavior did not significantly predict any mental health outcome, and only coping styles were significant predictors here.

Most current interventions that target bystander behaviors address positive forms of bystander behavior⁵⁵⁻⁵⁷, or are only successful in changing positive bystander behavior or its behavioral determinants⁵⁸. Our results, however, stress the need to design effective interventions that can reduce negative bystander behavior in cyberbullying, to decrease harmful mental health outcomes among cyberbullying victims. This is especially needed for youth who feel most victimized, in addition to coping programs targeting all youth who are confronted with cyberbullying experiences.

This study has implications for cyberbullying prevention practice and research. Based on traditional bullying research, bystanders are assumed to play a role in reducing the harm for victims of cyberbullying. To the best of our knowledge this, however, remained untested. Our study provided first evidence that how bystanders respond to cyberbullying is indeed associated with victims' emotions and mental health, and that involving bystanders in cyberbullying interventions is advisable. Future experimental or longitudinal research is needed to establish directionality. Our study moreover indicated that many bystander interventions may focus on the wrong type of behavior. Most interventions focus on positive bystander responses, whereas reducing negative bystander responses is needed, as these responses are more strongly associated with harm for victims. And lastly, in spite of a general preference in recent literature for multi-item scales to define cyberbullying victimization because of scale reliability, we recommend to use single-item scales to identify youth most in need of interventions.

Limitations and strengths

The cross-sectional nature of the study limits conclusions on directionality. Although the sample of adolescents was sizeable, due to a low prevalence of cyberbullying victimization (single-item scale), the

sample of cybervictims was rather limited. The list of possible bystander responses was comprehensive and covered all potential roles, but did not contain information on the manner in which this response was provided. Qualitative research may provide further insights in how to effectively communicate positive bystander responses. No distinction was made between victims-only and bully-victims, despite literature showing worse mental health outcomes among bully-victims. This was not anticipated in the original study design, and the remaining sample of bully-victims (25%, n=18) was too small to drill down into specific categories of victims. Furthermore, perpetration of POP was not assessed. This may warrant examination in future studies. The study also had several strengths. Findings provide support for the importance of including bystanders in cyberbullying prevention and intervention programs, to reduce the harm to victims' mental health. The study moreover did not only include transitory emotional states, but also investigated mental health outcomes using validated scales. And lastly, using both single-item and multi-item scales revealed interesting differences in youth's emotional experiences and mental health outcomes, and emphasized that bystander responses are especially important for cybervictims, who also experienced more forms of cyberbullying and more mental health problems. Effectiveness studies of cyberbullying interventions including bystander support, may wish to include a single-item that clearly assesses cyber-victimization, to ensure effects are reached among those who most need it.

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