

Positive Attitudes as a Mediator Between Moral Disengagement and Cyberbullying Behaviors

Kailee Kodama, Jennifer Harriger, Elizabeth Krumrei Mancuso, and Cindy Miller-Perrin

Pepperdine University

## Abstract

**Objective.** The current study examined whether (1) higher moral disengagement scores would be positively correlated with higher frequencies of engaging in cyberbullying, (2) positive attitude scores would be positively correlated with higher frequencies of engaging in cyberbullying, and (3) positive attitudes towards cyberbullying would mediate links between moral disengagement and frequency of engaging in cyberbullying.

**Method.** Three surveys, the Mechanisms of Moral Disengagement Scale (MMD), Cyberbullying Perpetration Measure (CPM), and Positive Attitudes towards Cyberbullying Questionnaire (PATC) were administered to 114 undergraduate students.

**Results.** Correlational analysis indicated significant positive correlations between PATC and CPM scores ( $r = .442, p < .01$ ), CPM and MMD scores ( $r = .199, p < .05$ ) and MMD and PATC scores ( $r = .591, p < .01$ ). Therefore all preconditions for mediation analysis were met. Several regression analyses were conducted to determine the mediation effects of positive attitudes toward cyberbullying on the relationship between cyberbullying behaviors, moral disengagement, and sex.

1. Moral disengagement regressed onto cyberbullying behaviors with statistical significance, indicating there was a relationship that could be mediated ( $R = .246, p < .05$ )
2. Moral disengagement also regressed significantly onto positive attitudes toward cyberbullying, establishing a link between the two predictors ( $R = .596, p < .001$ ).
3. A large, positive correlation was found between self-reported cyberbullying behavior in college students and the optimal linear combination of predictors ( $R = .462, p$

< .001), such that as self-reported cyberbullying behaviors increased, so did positive attitudes towards cyberbullying and moral disengagement.

4. In the final regression model, moral disengagement was not statistically significant ( $B = -.041, p = .250$ ), resulting in complete mediation by positive attitudes toward cyberbullying.

**Implications.** While previous research has shown moral disengagement to be a potential factor in reasons for cyberbullying perpetration behaviors, the current study found that moral disengagement required positive attitudes toward cyberbullying in order to evoke higher rates of cyberbullying. As there is relatively little research examining the relationship between cyberbullying behaviors, moral disengagement, and positive attitudes towards cyberbullying, future research would do well to further investigate these links. Concerning educational bullying prevention and awareness programs, program developers are advised to target attitude change and to include information regarding moral disengagement and its potentially harmful effects.

*Keywords:* Cyberbullying; Moral Disengagement; Positive Attitudes; Bullying; Technology

### Moral Disengagement as a Mediator between Positive Attitudes and Cyberbullying Behaviors

With the fast paced development of the internet, an array of new communication venues have arisen via social media and electronic devices (Whittaker & Kowalski, 2015). Younger generations quickly adapt to rapid advancements in technology, in some cases allowing them to abuse new technologies that lack proper systems for monitoring these interactions.

Cyberbullying is one such common form of problematic peer interactions. Though the number of children who are victims of cyberbullying varies across studies—anywhere from 11% to 25% of children report such interactions—cyberbullying has indisputably become a prevalent problem (Kowalski & Limber, 2007; Ortega et. al, 2009; Wachs, 2012; Williams & Guerra, 2007). In response, the past fifteen years have seen a dramatic increase in the amount of literature concerning cyberbullying and its potential effects, especially in prepubescent through teenage years. The current study aims to develop the research regarding less studied areas of cyberbullying, including perpetration behaviors among college students.

Previous research has examined the various platforms used for cyberbullying purposes. Menesini, Nocentini, and Calussi (2011) found that the most severe types of cyberbullying include rude and inappropriate photos or messages, particularly to private online accounts. However it was noted that even less severe acts, such as insults in chatrooms, can become detrimental if committed repeatedly over time. Whittaker and Kowalski (2015) also concluded that the highest instances of cyberbullying occur over social media, specifically Facebook. On Facebook, inter-peer cyberbullying was the most common form of cyberbullying. However, the majority of inappropriate comments on other social media websites were sent anonymously. This may be indicative of specific environmental circumstances which contribute to cyberbullying perpetration: cyberbullying seems to occur more frequently in atmospheres where there is limited

personal interaction with other users and where the repercussions of inciting actions are not witnessed by the cyberbully. By distancing himself from the recipient's emotional reaction, the cyberbully dehumanizes his victim (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996).

Potentially influential longitudinal predictors of cyberbullying include the amount of time spent online and participation in anti-social behaviors both on and offline (Sticca, Ruggieri, Alsaker, & Perren, 2013). Given the specific circumstances under which cyberbullying occurs, one goal of the current study is to identify explicit characteristics of individuals who tend to participate in cyberbullying.

Research on cyberbullying is important in part because the effects of cyberbullying, as well as traditional bullying, can be detrimental to an individual's emotional, mental, and physiological well-being. Negative emotions, such as anger, stress, and depression, were reported by victims of both traditional and cyberbullying (Ortega et al., 2009). Hansen, Hogan, and Persson (2011) also found that victims' mental health deteriorated, regardless of the frequency of bullying. Studies have also shown a decline of victims' physical health, including symptoms such as sore throats, nausea, colds, and coughs (Wolke, Woods, Bloomfield, & Karstadt, 2001), lower cortisol levels—indicative of a depressed mood and low energy (Hansen, Hogan, & Persson, 2011)—and heightened C-reactive protein levels into adulthood, which are associated with increased risks of heart disease, stroke, and diabetes (Copeland et al., 2014). In order to prevent further development of such symptoms, it has become necessary to understand and eliminate bullying of all forms.

### **Traditional Bullying vs. Cyberbullying**

Numerous studies have compared cyberbullying behaviors with those of traditional bullying in order to explore the commonalities and differences in areas such as victim-bully

relationships, differences in perpetration styles, reasons for perpetration, and subsequent victim behaviors and pathology. There has been an increasing trend in cyberbullying participation and victimization over the past decade, yet the specific ratio of perpetrators to victims tends to vary based on a school's location, demographics, and socioeconomic status (Wachs, 2012). These studies indicate that while cyberbullying experiences were recorded less frequently than traditional bullying—traditional bullying tends to happen twice as often—over time recorded cyberbullying instances have grown quickly in comparison to traditional bullying (Williams & Guerra, 2007; Wachs, 2012). Traditional bully-victim statuses tend to carry over into cyberbullying situations as well, meaning that the bullying continues long after a victim has left school premises (Wachs, 2012).

Cyberbullying differs from the two forms of traditional bullying, verbal and physical, as it occurs via a form of communication removed from another person's physical space and lacks face-to-face contact, excluding what occurs over video conferencing mediums (Mancilla-Caceres, Espelage, & Amir, 2014). While certain characteristics of cyberbullying tend to reflect those of verbal bullying, not all the behavioral theories which establish reasons for traditional bullying are relevant to cyberbullying. In fact, due in part to differences in environment and decreased levels of peer influence, reasons for cyberbullying perpetration have been postulated to differ almost entirely from those of physical or verbal bullying (Wachs, 2012; Williams & Guerra, 2007). Because cyberbullies tend to experience less remorse or guilt after perpetrating, it is possible that cyberbullies engage in dissociative tactics, such as moral disengagement, which are suited to the online environment, in ways that traditional bullying is not (Wachs, 2012). Yet, a defined understanding of reasons for cyberbullying behaviors is currently lacking.

Despite their differences, both cyberbullying and traditional bullying have been deemed immoral behaviors (Valliancourt, Hymel, & McDougall, 2003) and are preventable given correct instruction (Ross & Horner, 2014). Multiple preventative programs have been established to assist children in understanding how bullying is a breach of moral character. However, these programs still focus largely on traditional forms of bullying, leaving the topic of cyberbullying unaddressed (Ross & Horner, 2014; Williams & Guerra, 2007). These programs would do well to incorporate information on cyberbullying, and the current study aims to add to the pool of research available to these programs.

### **Moral Disengagement**

In order to prevent cyberbullying, researchers must first understand the motivations behind perpetration. Moral disengagement has previously been understood as a reason for verbal and physical bullying behaviors (Wachs, 2012). The current body of research has begun to apply moral disengagement to cyberbullying, and the current study purposes to do so as well (Bussey, Fitzpatrick, & Raman, 2015; Thornberg & Jungert, 2014; Wachs, 2012).

Moral disengagement has been defined as the ability to, in a specific situation, set aside one's values in order to participate in a behavior that would usually be contradictory to his or her normal code of conduct. In doing so, the individual avoids incurring guilt from his or her actions, yet is still able to execute immoral behavior in consecutive, similar situations (Bussey et al., 2015; Sticca et. al., 2013; Thornberg & Jungert 2014; Wachs, 2012). In the context of cyberbullying: one might disengage while on social media, either through conscious reasoning or unconsciously. This distancing from set values allows one to participate in immoral behaviors, such as sending a rude message or an inappropriate picture, without feeling regret or damaging one's own self-perception (Bussey et al., 2015). In regards to cyberbullying research, this theory

seems to be one of the more successful in explaining reasons for perpetration, though the body of empirical work supporting this theory is limited. Wachs (2012) posits that because of online anonymity and singular or chance interaction with victims, online and electronic sources of communication make it easier for individuals to morally disengage, and so rates of moral disengagement are higher among cyberbullies. Given the potential success of moral disengagement in explaining cyberbullying behaviors, the current study aims to gather information on moral disengagement behaviors in order to compare them to the occurrence of cyberbullying participation.

### **Positive Attitudes**

Recent studies have revealed that positive attitudes towards cyberbullying are a strong predictor of cyberbullying behavior (Barlett & Gentile, 2012). Previous research has found that there tends to be a positive correlation between the combination of positive attitudes regarding cyberbullying coupled with positive reinforcement and increased immoral behavior (Barlett & Gentile, 2012; Heirman & Walrave, 2012). In addition, other studies have revealed that participants tend to hold more lenient attitudes towards cyberbullying perpetration in comparison to traditional bullying, especially as students grew older (Barlett & Gentile, 2012; Bussey, Fitzpatrick, & Raman, 2015). Such results indicate that prevention programs need to directly address the issue of cyberbullying as well as change their curriculum for specific age groups in order to change attitudes and affect antisocial behaviors. In order to support previous research, the current study also aims to gather data on cyberbullies' motivations and attitudes and compare the data alongside moral disengagement. Given that moral disengagement releases a person from incurring guilt for their actions, it is very likely that cyberbullies may maintain high positive attitudes towards cyberbullying through the employment of moral disengagement.



## **Current Study**

The goal of the current study is to foster a better understanding of why individuals engage in acts of cyberbullying. In particular, it aims to gather data on cyberbullies' motivations and attitudes. It postulates that moral disengagement in relation to cyberbullying perpetration is mediated by positive attitudes towards cyberbullying. Moral disengagement occurs in specific settings. If an individual sees the online environment as hostile, he or she will most likely not disengage. Thus, it is necessary for an individual to hold positive opinions about cyberbullying in order for moral disengagement and cyberbullying behaviors to be linked. In addition, the greater the tendency to morally disengage in an online setting, the less guilt a cyberbully will experience, in effect reinforcing her actions and helping maintain a stable perception of her self-worth. The confidence derived from a stable self-worth and successful bullying then serves to increase positive attitudes towards cyberbullying, which are known to predict rates of cyberbullying in individuals.

We therefore hypothesized that: (1) higher moral disengagement scores will be positively correlated with higher frequencies of engaging in cyberbullying, (2) positive attitude scores will be positively correlated with higher frequencies of engaging in cyberbullying, and (3) positive attitudes towards cyberbullying will mediate links between moral disengagement and frequency of engaging in cyberbullying.

## **Method**

### **Participants**

The initial sample consisted of 115 undergraduate college students over the age of 18 years. One outlier was removed from the data set (MMD Outlier Score = 63.00,  $M = 42.61$ ,  $SD = 6.25$ ) as it was over three standard deviations from the mean. The final sample consisted of 114

students (82 female, 32 women,  $M_{age} = 19.05$  years) recruited from a private university in Southern California. The majority of participants were Caucasian (60%) and Asian American (15.8%). All participants were drawn from lower level, general education psychology classes.

### **Materials**

**Cyberbullying Perpetration Measure (CPM).** This questionnaire is a measure of cyberbullying perpetration behaviors (Calvete, Orue, Estevez, Villardon, & Padilla, 2010). The questionnaire consists of 16 items that measure different forms of cyberbullying discovered in previous research including pretending to be someone else online or sending threats over messaging (Calvete et al., 2010). For each item participants rated the frequency of their actions using a Likert scale ranging from (0) never to (1) sometimes to (2) often. Possible scores ranged from 0 to 31 with higher scores indicating greater frequency of bullying. Some questions asked for specific written examples in order to better grasp the motivations and situation behind the participants' behavior, so as not to misinterpret actions that were not malicious in nature. For example, item 10 states "Recording a video or taking pictures by cell phone while someone hits or hurts another person. If so, describe:" (Calvete et al., 2010). Written answers were not given a score and if the answers were not related to cyberbullying, the participants' rating was changed to a 0. Free-response answers were not considered in subsequent analysis as we were not concerned with researching specific types of cyberbullying but rather frequency of events. A single factor model loaded each item between 0.90 and 0.99, and alpha coefficient = 0.96 (Calvete et al., 2010).

**Positive Attitudes towards Cyberbullying Questionnaire (PATC).** A modified version of the PATC was used to measure how students felt towards cyberbullying (Barlett & Gentile, 2012). The 9 items reflect feelings of either indifference towards or participation in instances of

cyberbullying. One example is “it makes me feel good to send texts that make fun of others” (Barlett & Gentile, 2012). Items referencing MySpace and Facebook were changed to include only Facebook as we found MySpace to be irrelevant among today’s current generation. The participants rated their attitudes towards cyberbullying based on a five point Likert Scale ranging from (1) strongly agree to (5) strongly disagree. Scores ranged from a 9 to 45. Low scores indicate that an individual holds more positive attitudes towards cyberbullying. The PATC’s normative sample had an alpha coefficient = .76 (Barlett & Gentile, 2012).

**The Mechanisms of Moral Disengagement Scale (MMD).** The MMD was developed in order to measure a child’s susceptibility to participating in moral disengagement, which is the selective disengagement from moral conduct, allowing for an individual to act outside of his or her values without damaging his or her self-perception (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996). The 32 items represent 8 sub-scales which include 4 questions each, to address the 8 mechanisms of moral disengagement: (1) moral justification, (2) euphemistic language, (3) advantageous comparison, (4) displacement of responsibility, (5) diffusion of responsibility, (6) distorting consequences, (7) attribution of blame, and (8) dehumanization. The items cover situations that include damage to property, verbal and physical abuse, and deception. One example is “teasing someone does not really hurt them” (Bandura et al., 1996). Items were rated on a three-point Likert scale ranging from (1) disagree to (2) neutral to (3) agree. Possible scores ranged from 32 to 96. A higher score indicates a higher likelihood to participate in moral disengagement. The MMD normative sample had an alpha reliability coefficient = .82 (Bandura et al., 1996).

## **Procedure**

The students signed a consent form which informed them of the study and acknowledged their right to withdraw. The study was conducted in the university's computer lab with groups of 5 to 15 students and also made available to take online. The three online surveys were hosted through the university's research system and administered in the following order: CPM, PATC, and then MMD, taking up to about 15 minutes to complete. Students were encouraged not to talk amongst themselves. They were given the option to discontinue the study at any time. Students who participated were rewarded credit towards a research requirement.

## Results

### Preliminary Analyses

**Sex differences.** Descriptive statistics were examined for scores on the CPM, PATC, and MMD. T-test were conducted to examine sex differences on scores for the CPM, PATC, and MMD (See Table 1). Males ( $M = 2.5$ ,  $SD = 2.31$ ,  $n = 32$ ) cyberbullied significantly more often than females ( $M = 1.60$ ,  $SD = 1.89$ ,  $n = 82$ ),  $t = -2.146$   $p < .05$ . They were also found to have more lenient attitudes towards cyberbullying ( $M_{\text{males}} = 19.09$ ,  $M_{\text{females}} = 16.35$ ) and participation in moral disengagement ( $M_{\text{males}} = 45.72$ ,  $M_{\text{females}} = 41.39$ ). As males were found to have significantly higher scores on all of the dependent variables, sex was controlled for in the mediation analyses.

**Internal consistency and split-half reliabilities.** Cronbach's alpha was calculated for each scale using data from all participants ( $n = 114$ ) in order to determine internal consistency reliability. Alpha values for the current study's scales were lower than reported normative sample alpha values (CPM alpha coefficient = .670, PATC alpha coefficient = .674, MMD alpha coefficient = .806).

### Mediation Analyses

Regression analyses were conducted according to Baron and Kenny's mediation model (1986) and modeled after Kenny's Four Step Mediation (2014). The method requires:

1. The causal variable ( $X$ ) be correlated with the outcome ( $Y$ ), establishing through a statistically significant regression coefficient that there is an effect that can be mediated.
2. The causal variable ( $X$ ) be significantly correlated with the mediator ( $M$ ), establishing a link between the two.
3. The mediator ( $M$ ) affects the outcome ( $Y$ ). This is done by using  $M$  as a predictor of  $Y$  while controlling for  $X$  to establish the effect of the mediator on the outcome.
4. To establish partial mediation by  $M$  on the relationship between  $X$  and  $Y$ , the regression coefficient for  $X$  must be statistically significant. If a non-significant beta is also achieved for  $X$  on  $Y$ , the effect is completely mediated.

In the current study,  $X$  was represented by the MMD,  $Y$  by the CPM, and  $M$  by the PATC. The regression model compared two continuous predictors, the MMD and PATC, on a continuous outcome measure of CPM.

**Variables meeting the preconditions for mediation.** Correlation analysis were conducted between the CPM, PATC, and MMD using data from all participants ( $n = 114$ ) in order to determine whether preconditions for mediation analyses were met (see Table 2). PATC and CPM scores were positively correlated ( $r = .442, p < .01$ ), as well as CPM and MMD scores ( $r = .199, p < .05$ ). There was a strong positive correlation between MMD and PATC scores ( $r = .591, p < .01$ ). Statistically significant Pearson correlations were obtained between all scales, indicating satisfaction of all preconditions.

**Mediation conditions.** Several regression analyses were conducted to determine the mediation effects of PATC scores on the relationship between MMD and CPM scores and sex

was controlled for in all models. MMD regressed onto CPM with statistical significance, indicating there was a relationship between moral disengagement and cyberbullying behaviors that could be mediated ( $R = .246, p < .05$ ). MMD also regressed significantly onto PATC, establishing a link between the two predictors ( $R = .596, p < .001$ ). A large, positive correlation was found between CPM and the optimal linear combination of predictors ( $R = .462, p < .001$ ), such that as self-reported cyberbullying behaviors increased, so did individuals' positive attitudes towards cyberbullying and moral disengagement. In the final regression model, moral disengagement was not statistically significant ( $B = -.041, p = .250$ ), resulting in complete mediation by positive attitudes toward cyberbullying. These results indicate participation in moral disengagement does not necessarily predict cyberbullying behaviors; though when coupled with positive attitudes it may make an individual more inclined towards such.

### **Discussion**

The goal of the current study was to examine the relationship between positive attitudes about cyberbullying, moral disengagement, and cyberbullying behaviors. Based off previous research indicating links between moral disengagement and cyberbullying behaviors, the researchers hypothesized that higher moral disengagement scores would be positively correlated with higher frequencies of engaging in cyberbullying (Bussey, Fitzpatrick, & Raman, 2015; Thornberg & Jungert, 2014; Wachs, 2012). Findings from the current study support previous research, indicating that there is a high chance moral disengagement may play some role in the frequency of cyberbullying behaviors.

The researchers' second hypothesis, that positive attitudes would be correlated with more frequent cyberbullying behaviors, based off previous research that indicated a strong link

between the two, especially in older students, was also supported by the current study (Barlett & Gentile, 2012; Heirman & Walrave, 2012).

The final hypothesis, that positive attitudes would fully mediate links moral disengagement and cyberbullying was supported by the current research, indicating that the involvement of moral disengagement on cyberbullying behaviors may not be as simple as previously believed (Bussey, Fitzpatrick, & Raman, 2015; Thornberg & Jungert, 2014; Wachs, 2012). As evidenced by the mediation model, it is possible that moral disengagement cannot be regarded as a predictor of cyberbullying, unless also present with positive attitudes towards cyberbullying. Without this combination, moral disengagement, as it stands alone, is not an accurate predictor of cyberbullying behaviors. The current study's mediation model is a good example of how predictors of traditional bullying behaviors do not always carry over to cyberbullying behaviors. This study is only a small, yet integral part in understanding the diversity of factors underlying cyberbullying behaviors; it illustrates not only the variety but also the interplay between variables.

Findings from the current study did not support previous statements which referenced the amount of time spent online as a predictor of cyberbullying behaviors. (Sticca, Ruggieri, Alsaker, & Perren, 2013) The current study however, did support conjectures from previous literature which indicate that males are more likely to report higher cyberbullying perpetration behaviors than females (Williams & Guerra, 2007). These findings matched previous research related to gender and age differences (Barlett & Gentile, 2012; Bussey, Fitzpatrick, & Raman, 2015). However, our findings were not consistent with previous findings stating a difference in cyberbullying behavior between ages. This may be in part a result of testing an older, more

mature population - there is less variance between ages and individual's internal convictions may be more stable (Barlett & Gentile, 2012; Bussey, Fitzpatrick, & Raman, 2015).

### **Limitations**

There are several limitations which could have affected the findings of the current study, including a somewhat limited sample size ( $n = 114$ ) and diversity in population, as most participants were wealthy Caucasian students attending a private college. Further research including a more diverse sample would increase the generalizability of these findings. Regarding the cyberbullying scales, future research could include a more comprehensive analysis of cyberbullying perpetration in order to better understand specific subcategories of cyberbullying and provide an in-depth look at the varying components of a very broad topic. Another potential limitation to the current study might be the low inter-reliability scores within the scales, which would have resulted in data that did not accurately represent the construct, such as cyberbullying behaviors. This issue could be resolved by simply using similar measures to test the same three constructs.

### **Research Implications**

Future researchers may find it beneficial to further investigate the relationship between moral disengagement and cyberbullying. Though the body of work regarding moral disengagement and traditional bullying is substantial, as previous research has shown, not all underlying reasons for traditional bullying are applicable to cyberbullying and future research would do well to expand the body of literature supporting the connections between the two topics. As the measure for moral disengagement assessed only the classical definition (Bussey et al., 2015), researchers could look into moral disengagement techniques specific to cyberbullying and the explicit implications from participation. Building off the current findings, the



malleability of attitudes towards cyberbullying, and whether that produces a change in students' behavior, could also be another area of study.

### **Clinical & Policy Implications**

Clinical implications include the spread of awareness and education in moral disengagement. Schools and private counselors should take the current study into account when addressing cases of bullying, especially when working with perpetrators. Testing for moral disengagement and addressing this topic during sessions may help in redirecting deviant or destructive behavior. In addition, school wide education on the concepts comprising moral disengagement and its harmful effects may contribute to reduction of positive attitudes about cyberbullying, especially when presented to a younger, more impressionable audience.

Researchers and school administrators should take the current findings into serious consideration. Because of the sensitive nature of the subject and growing reports of perpetration, it is important that school administrators and teachers find a way to educate students on moral behavior and reduce instances of cyberbullying. The current study provides a foundation upon which to build prevention and awareness programs: those looking to develop anti-bullying campaigns should take the current findings, along with related subject matter, into consideration. In creating curriculum, the negative effects and repercussions of cyberbullying should be emphasized in order to prevent the proliferation of positive attitudes. In attempting a holistic eradication of bullying behaviors, moral disengagement should also be addressed. Bullying, in all its forms, is not something that can be solved overnight. Rather, it takes the slow changing of perceptions, behaviors, and culture in order to address what has become a global issue.

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Table 1. Sex Differences on Cyberbullying and Moral Disengagement Measures.

Variable	Mean (SD)			<i>t</i>
	Total Sample	Males	Females	
Cyberbullying Perpetration Measure	1.85 (2.05)	2.5 (2.31)	1.60 (1.89)	-2.146*
Positive Attitudes towards Cyberbullying Questionnaire	17.12 (4.85)	19.09 (5.81)	16.35 (4.22)	-2.79**
Mechanisms of Moral Disengagement Scale	42.61 (6.25)	45.72 (6.41)	41.39 (5.78)	-3.48**

\**t* is significant at the 0.05 level (2-tailed).

\*\**t* is significant at the 0.01 level (2-tailed).

Table 2. Correlations between scales.

Variable	Cyberbullying Perpetration Measure	Mechanisms of Moral Disengagement
Positive Attitudes towards Cyberbullying Questionnaire	.442**	.591**
Mechanisms of Moral Disengagement	.199*	–

\*Correlation is significant at the 0.05 level (2-tailed).

\*\*Correlation is significant at the 0.01 level (2-tailed).