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The Relationship between Parenting Practices and Cyberbullying Perpetration: The Mediating Role of Moral Beliefs

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Keywords: cybercrime awareness; cyberbullying, parenting, moral beliefs, South Korea

Abstract:

Criminologists and psychologists have long recognized that parenting practices can affect childhood outcomes and the development of moral beliefs in children. Another body of literature provides evidence that morality is a key cause of antisocial behavior. Yet, a noticeable gap in this line of work has been testing the mediation effects of parenting practices on cyberbullying via moral beliefs. Using a sample of South Korean adolescents, we tested whether moral beliefs mediate the relationships between parenting practices and cyberbullying perpetration. Results show that parental supervision and excessive parenting can influence cyberbullying perpetration and that the impact of parenting practices is partially indirect through moral beliefs.

Introduction

In recent years, criminological theories have been devoted to exploring why individuals engage in relatively new and continuously evolving online criminal or delinquent behaviors. Several online behaviors/methods can fall under the category of cyberbullying, such as cyberharassment, cyberstalking, online denigration, online impersonation, and online exclusion utilizing various tools and platforms of social media (Kremling & Parker, 2018). Although the verdict is still out on the legality of different types of cyberbullying and whether they should be deemed illegal, this lack of legal definition does not discount the impact that cyberbullying can have on the victims. Similar to traditional bullying, cyberbullying may occur within a large group or community and have damaging consequences for the victim, which can include depression, fear, anxiety, drug/alcohol use, or suicide (Brailovskaia, Teismann, & Margraf, 2018; Kim, Kimber, Boyle, & Georgiades, 2019).

There have been some attempts to apply well-known traditional theories (e.g., self-control theory, general strain theory, routine activities theory) to explore and describe cybercrimes and delinquent online behaviors (Baek, 2018; Burruss, Bossler, & Holt, 2013; Choi & Kruis, 2020a; Kabiri, Choi, Shadmanfaat, & Lee, 2020). Many of these studies examine how both individual and external factors influence the likelihood of engaging in online criminal or delinquent behavior. However, minimal research exists on the interrelationships between parenting practices, morality, and online behaviors, particularly cyberbullying. This study attempts to use a morality-based theory to examine the relationship between cyberbullying and parenting practices.

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Empirical studies provide support for the interaction effects between parenting practices and adolescent delinquent behavior (De Kemp, Scholte, Overbeek, & Engels, 2006; Kabiri, Choi, Shadmanfaat, & Yun, 2020), indicating that both higher levels of parental support and monitoring and lower levels of psychological control toward adolescents are associated with decreased levels of delinquent acts. In addition, previous studies have shown that parenting practices can influence the development of moral beliefs in children (Svensson, Pauwels, Weerman, & Bruinsma, 2017). In other words, high levels of attachment to parents and effective parental monitoring as primary socialization mechanisms are significantly related to developing positive moral values and moral emotions over time among children to lower involvement in delinquency. Finally, moral beliefs are significantly associated with the likelihood of involvement in antisocial behavior (Wikström, Oberwittler, Treiber, & Hardie, 2012), arguing that moral education and cognitive nurturing training among youths is the most important factor for reducing delinquent behavior.

For this study, we harness the concept of morality from the recently advanced criminological approach of situational action theory (SAT) and other assumptions to understand situational factors and contexts of cyberbullying. The main assumption of the moral aspect of SAT is that an individual's morals or moral beliefs influence their course of action because these morals impact what alternatives for action a person may consider and act upon (Wikström, 2004). Though morality has become a core concept to the situational action theory and self-control aspect, subjected to numerous studies (Pauwels, Svensson, & Hirtenlehner, 2018), there is a shortage of empirical attempts to apply them to cyberbullying. Notwithstanding previous studies, assessing moral beliefs as a mediator linking parenting practices to cyberbullying is limited and deserving of empirical scrutiny, especially given the importance of the concepts of moral beliefs and parenting practices in criminology. Therefore, the current study aims to examine both variables morality and parenting practices to explain levels of cyberbullying behaviors.

Literature Review

Parenting Practices and Moral Beliefs

The parenting literature has consistently shown that parenting practices are significantly related to childhood outcome and that parenting practices can affect the moral development of children (Baumrind, 1991; Burt, Simons, & Simons, 2006; Cicchetti & Toth, 1993; Finkenauer, Engels, & Baumeister, 2005; Ishoy, 2017; Maas, Herrenkohl, & Sousa, 2008; Patrick & Gibbs, 2012; Thornberry, Freeman-Gallant, Lizotte, Krohn, & Smith, 2003; Widom, 1989; Wright & Cullen, 2001). Studies have also shown that certain parenting styles (namely inductive disciplinary approaches, showing affection, showing support, and the levels of involvement and responsiveness) have a positive effect on the levels of moral maturity in children (Boyes & Allen, 1993; Hart, 1988; Hoffman & Saltzstein, 1967; Parikh, 1980; Speicher, 1992). These studies, and others, vary in their use of both the terms parenting practices and moral beliefs/development. Despite these varying conceptualizations and operationalizations, it is clear, and not necessarily surprising in many cases, that different parenting practices have different effects on the moral development of children.

For instance, Walker and Hennig (1999) examined the effect that parenting styles (supportive styles vs. harsher styles of parenting) had on the moral development of children. Unsurprisingly, more supportive styles of parenting were associated with higher levels of moral judgment. In comparison, lower levels of

moral judgment in children were found to be associated with more harsh parenting styles and practices. Moral-based measures have also been examined as a mediator between parental practices and outcomes measures such as criminal offending and delinquency (Ishoy, 2017; Simons, Simons, Chen, Brody, & Lin, 2007; Thomas, 2011) (Ishoy, 2017; Simons, Simons, Chen, Brody, & Lin, 2007; Thomas, 2011), and have suggested that indeed measures of morality serve as a mediating factor in this relationship.

Ishoy (2017) examined morality as a mediator of the relationship between parenting practices and violent and property crimes among a sample of court-adjudicated juvenile delinquents ranging from ages 14-18 using Pathways to Desistance Project data (Mulvey, 2012). Parenting practice-related variables included parental monitoring measures, parental warmth, parental hostility, and unsupervised socializing, while morality was measured using the Mechanisms of Moral Disengagement instrument (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996). The main findings from the study suggest that positive parenting practices result in lower levels of moral disengagement. At the same time, increased rates of parental monitoring predicted a reduction in rates of violent offending but an increase in property offending. A positive relationship between parental hostility and both property and violent crimes was also noted. In the final regression model, results suggested that moral disengagement did not demote the parenting variables to a level of non-significance for violent offending and only demoted the parental hostility variable to a level of non-significance for property offending.

In regards to cyberbullying, Kabiri, Choi, Shadmanfaat, and Yun (2020) examined how moral emotions (anticipated guilt and anticipated shame), moral identity (qualities such as caring, compassion, fairness, friendliness, generosity, hardworking, honesty, and kindness) and moral values (level of perceived wrongness of engaging in cyberbullying) mediate the association between parenting practices (ineffective parenting, mother and father nurturance scales, and mother and father involvement) and cyberbullying among 384 Iranian sports fans ranging from ages 16-18. Results showed that morality and parenting practices directly affect one's likelihood of engaging in cyberbullying. Unsurprisingly, ineffective parenting was associated with a reduction in the moral capacity of the youth (moral values and identity). They also found that moral identity and moral values serve as mediating variables between parenting practices and cyberbullying. Lastly, moral identity and moral values are positively correlated with moral emotions, suggesting that those with higher levels of moral identity or moral values will likely have higher levels of guilt and shame. Also, those with lower levels of moral emotions were more likely to report high levels of cyberbullying. In sum, these studies support the call for further examination into the direct and indirect effect of morality on parenting practices and cyberbullying perpetration and further inquiry into the potential mediating effect of morality between different parenting practices and cyberbullying perpetration (Ishoy, 2017; Kabiri, Choi, Shadmanfaat, & Yun, 2020; Patrick & Gibbs, 2012).

Moral Beliefs and Cyberbullying

Though it has been regarded as one of the social bond measures, morality has been relatively neglected. However, such a trend has changed as a second shift that morality has come to the forefront as a main causal factor in developing a theory of criminal and deviant behavior (Antonaccio & Tittle, 2008). For example, Wikström and Treiber (2007) argue that morality in their SAT is central in explaining crime with growing empirical support (Antonaccio & Tittle, 2008; Wikström et al., 2012; Wikström & Treiber, 2015).

Morality has become a more salient concept, particularly at the individual-level variable, to cause criminality and understand crime as acts of moral rule-breaking. Morality is a complex concept that is challenging to define and leads to theorizing and empirical research in various academic disciplines. According to Wikström and Treiber (2007), morality can be defined as “a moral rule is a rule that states what is right or wrong to do (or not to do) in a particular circumstance” (p. 241). Thus, various criminal offenses can be understood as breaking moral rules by an individual in a particular setting.

A large number of criminological studies support the relationship between moral beliefs and antisocial behavior. For example, Antonaccio and Tittle (2008) confirm that self-control is an important predictor of criminal behaviors, as many other studies do (Choi & Kruis, 2020b; Gottfredson & Hirschi, 1990; Wikström et al., 2012). But this study also finds that morality is shown to be a strong independent predictor in misbehavior with the strength that seems to surpass substantially that of self-control, indicating that weak morality would be one prime cause of criminal behavior. Anticipated states of shame as one’s self-conscious and moral emotion are related to fewer decisions to commit criminal offenses (Tibbetts, 2003). In testing an individual’s law-relevant morality, which is one of the key assumptions of situational action theory, Wikström and Svensson (2010) find that young individuals with a strong morality tend not to engage in criminal behaviors regardless of their ability to exercise self-control. It indicates that, unlike the previous studies where morality has been positioned relative to one of the measures of self-control or social bond theories, morality has been recognized as the main factor in criminal and deviant behaviors and has been situated relative to variables that are featured by other criminological theories.

Early studies that have examined theoretical explanations for criminal behaviors in online settings have considered morality, self-control, social control, or social learning measures. For instance, Higgins and Wilson (2006) take an example of software piracy to link its criminological explanation to self-control and social learning theories, contending that low self-control, differential association, and attitudes have the effects on software piracy, which by and large confirm the previous findings of their links to criminality. But their second test is whether the conditions of low self-control and differential association are affected by low morality. Their study finds that such conditions are present among the subsample who show low moral condition but disappear in the high moral subsample (see also, Choi & Yun, 2020).

The next approach appears to test the difference between traditional bullying and cyberbullying by focusing on the effect of morality (Perren & Gutzwiller-Helfenfinger, 2012; Pornari & Wood, 2010; Robson & Witenberg, 2013). Those studies present that both traditional bullying and cyberbullying share the common ground that lower commitment to moral values, lower feelings of moral emotions, and moral disengagement are accountable for higher levels of bullying acts among adolescents. The distinction between the two bullying behaviors exists (e.g., venue, tools, modes of operation, technology involvement, etc.). Still, the studies show that morality is a critical causal factor related to lower levels of commitment and feelings and linked to bullying acts.

In the more recent approach in studying the relationship between morality and cyberbullying (Bussey, Fitzpatrick, & Raman, 2015; Kabiri, Choi, Shadmanfaat, & Yun, 2020; Kyriacou & Zuin, 2016), it seems to dissect the morality variable into several constructs (e.g., moral standards scale, moral disengagement scale, moral engagement scale, and self-efficacy beliefs scale) to examine the role of morality in cyberbullying behaviors and to focus exclusively on cyberbullying. As discussed in the previous sections, the earlier studies tend to regard morality as one of the social control or self-control measures. Still, the recent studies

seem to feature morality as the main factor in explaining cyberbullying and traditional bullying. For example, moral disengagement as one of the latent variables to measure lower levels of morality has been identified and applied to cyberbullying (Bussey et al., 2015; Kyriacou & Zuin, 2016). Those studies recognize that cyberbullying and traditional bullying have increasingly been conceptualized as moral behavior and utilize new morality factors, such as moral standards, moral engagement, moral disengagement, and the desensitization of prosocial values (e.g., trust, care, and support) and emotional empathy. The findings from those studies show strong support for the role of moral disengagement in cyberbullying behaviors that high levels of moral disengagement aptness are associated with higher levels of self-reported cyberbullying episodes (Bussey et al., 2015; Kyriacou & Zuin, 2016).

In short, recent studies in cyberbullying feature morality as a critical factor that is causally associated with levels of cyberbullying engagement, as well as traditional bullying (Bussey et al., 2015; Kabiri, Choi, Shadmanfaat, & Yun, 2020; Kyriacou & Zuin, 2016; Perren & Gutzwiller-Helfenfinger, 2012; Robson & Witenberg, 2013). However, the role of morality in cyberbullying needs to be investigated while considering other relevant variables (e.g., parenting practices).

The Effects of Parenting Practices on Cyberbullying Perpetration

Contrary to the morality factor as an individual level inner character, another angle to approach the causal relationship of cyberbullying behaviors is to consider external factors. Two such examples can be manifested as familial variables (e.g., low family functioning and family dissatisfaction) and parental factors (e.g., poor parent-adolescent relationships, low parental monitoring, and house rules regarding the time spent online) (Chang et al., 2015). For example, studies have established the relationship between family-related variables and risky online behaviors, showing that such factors as low family functioning and family dissatisfaction are significantly associated with Internet addiction, pornography exposure, and cyberbullying with subsequent health risks as well (e.g., depression and smoking among adolescents) (Bauerman, 2013; Chang et al., 2015).

Parental factors also seem to be associated with risky behaviors in cyberspace as well as other risky behaviors (Baek, 2018; Chang et al., 2015; Martínez, Murgui, García, & García, 2019; Zurcher, Holmgren, Coyne, Barlett, & Yang, 2018). These studies find, for example, that poor parent-adolescent relationships, low parent monitoring, and lower levels of parent attachment are related to Internet addiction, cyberbullying, smoking, and depression. In comparison, adolescents with higher levels of restrictive parent mediations (e.g., rules regarding the time spent online and frequent monitoring and supervision) are less likely to have Internet addiction or to engage in cyberbullying (Chang et al., 2015; Martínez et al., 2019; Zurcher et al., 2018). These findings show that Internet addiction and restrictive parental mediation among young adolescents are significantly associated with cyberbullying behaviors in either a positive or negative direction.

Encouragingly, the recent studies advance the focus of this research with developed measures of parenting practices on parenting styles (Martínez et al., 2019; Zurcher et al., 2018) and parenting process (Elsaesser, Russell, Ohannessian, & Patton, 2017; Gómez-Ortiz, Romera, Ortega-Ruiz, & Del Rey, 2018; Vazsonyi, Ksinan Jiskrova, Özdemir, & Bell, 2017) and their causal connection to cyberbullying. Parenting styles are generally measured with four constructs authoritative, indulgent/permissive, authoritarian, neglectful to test which of them might be a risk or protective factor for cyberbullying as well as traditional bullying.

Both indulgent/permissive and authoritative parenting styles function as a protective factor, while authoritarian and neglectful parenting practices serve as a risk factor for cyberbullying engagement (Dehue et al., 2012; Gomez-Ortiz et al., 2018; Martinez et al., 2019). Particularly, indulgent/permissive parenting, characterized by acceptance and involvement practices, is the most protective parenting style and is associated with the lowest levels of cyberbullying victimization as well as traditional bullying. In contrast, the authoritarian parenting style, featured by strictness and imposition, turns out to link to the highest levels of both cyberbullying and traditional bullying victimization (Martínez et al., 2019; Zurcher et al., 2018).

The second aspect of parenting practices—the parenting process—has also shown to be associated with cyberbullying perpetration and traditional bullying. Measuring constructs of the parenting process can include a connection (emotional closeness), regulation (supervision and monitoring), autonomy support (Vazsonyi et al., 2017), affection and communication, promotion of autonomy, parental warmth, and disciplinary procedures (Elsaesser et al., 2017; Gómez-Ortiz et al., 2018). These studies find that appropriate parental regulation and monitoring (e.g., limiting time on the Internet) and higher levels of parental closeness and warmth are associated with higher self-control levels and lower rates of cyberbullying perpetration. Thus, two parenting practices—parenting styles and parenting processes—seem to be a strong protective or risk factor in explaining further Internet activities and involvement in cyberbullying perpetration and victimization in online spaces.

Self-Control, Deviant Peers, Moral Beliefs, and Cyberbullying

Recent studies highlight complicated interrelationships between key concepts in criminology, such as self-control, deviant peers, and moral beliefs (Choi & Kruis, 2020b; Choi & Yun, 2020; Chrysoulakis, 2020; Kroneberg & Schulz, 2018; Matthews & Agnew, 2008; Silver & Silver, 2021). For example, Chrysoulakis (2020) used data from the longitudinal project Malmö Individual and Neighbourhood Development Study and found that variation in morality is related to change in delinquent peer association. Similarly, Kroneberg and Schulz (2018) used data from a largescale panel study in five German cities and revealed notable interactions between self-control and morality. Although the majority of these findings were focused on traditional crime, some studies have been conducted to explore the interrelationships between key correlates with respect to cybercrime (Kabiri, Choi, Shadmanfaat, & Yun, 2020; Kabiri, Shadmanfaat, Samuels-Wortley, & Gallupe, 2020). Drawing on SAT, Kabiri, Shadmanfaat, et al. (2020) examined whether moral identity significantly interacts with self-control in predicting cyberbullying perpetration. They showed that the effect of low self-control on cyberbullying is stronger for individuals with low morality. The relationship between parenting practices and online deviances has been explored as well. Baek (2018) tested and extended Gottfredson and Hirschi's (1990) proposition that parenting practices affect children's self-control, consequently influencing the risk for involvement in online deviance. His study showed that parental management can influence children's online deviance perpetration through the development of self-control. Finally, some scholars have pointed out that differential association can play an important role in online deviant behaviors (Marcum, Higgins, Ricketts, & Wolfe, 2015; Morris & Higgins, 2010). For instance, Morris and Higgins (2010) showed that the presence of the peer network participating in online deviance is significantly associated with the risk of digital piracy perpetration. These studies suggest that self-control and delinquent peers are important correlates of online deviance that can potentially influence the interrelationships between parenting practices and morality in predicting cyberbullying. Accordingly, these variables will be held constant in our analyses.

Current Focus

Despite the numerous recent studies that closely scrutinize cyberbullying's nature and characteristics and its association with criminogenic variables, further research is necessary to examine more robust causal connections. Previous literature has identified both morality as the main factor to explain traditional bullying and cyberbullying behaviors and parental factors to be essential that may increase or decrease the likelihood of cyberbullying engagement. However, there is a lack of research attempts to connect both variables morality and parenting practices relative to cyberbullying.

As discussed earlier in the previous sections (Bussey et al., 2015; Kabiri, Choi, Shadmanfaat, & Yun, 2020; Kyriacou & Zuin, 2016; Perren & Gutzwiller-Helfenfinger, 2012; Robson & Witenberg, 2013), the recent emerging theories and research findings have suggested that probable links among parenting practices, moral beliefs, and cyberbullying can be plausible to investigate further, which may lead to a better understanding of the nature of cyberbullying. Our knowledge of the relationship between moral belief, undesirable behavior in an online setting, and the role of parenting practices in this relationship remains limited. The current study aims to fill these gaps in this line of inquiry by exploring how parental supervision and excessive parenting contribute to developing moral beliefs and cyberbullying in a sample of South Korean adolescents. In doing so, we ask the following three research questions: 1) Do parenting practices influence moral beliefs regarding cyberbullying? 2) Do parenting practices and moral beliefs influence whether students engage in cyberbullying? And 3) Do moral beliefs mediate the relationship between parenting practices and cyberbullying? The hypothesized model is presented in Figure 1. Specifically, the following hypotheses were tested:

Hypothesis 1: There will be a positive association between parental supervision and moral beliefs.

Hypothesis 2: There will be a negative association between excessive parenting and moral beliefs.

Hypothesis 3: Levels of parental supervision will be negatively associated with cyberbullying perpetration/victimization.

Hypothesis 4: Levels of excessive parenting will be positively associated with cyberbullying perpetration/victimization.

Hypothesis 5: Moral beliefs will have a negative association with cyberbullying, net of the effects of parenting variables, and other controls.

Hypothesis 6: Moral beliefs will mediate the relationship between parental supervision and cyberbullying.

Hypothesis 7: Moral beliefs will mediate the relationship between excessive parenting and cyberbullying.

Data and Method

The data used for the current study were drawn from a project conducted by the Korean Institute of Criminology. This project was a cross-sectional study of a sample of Korean adolescents conducted in 2009. The study was designed to collect information about Korean adolescents' relationships with parents and peers, moral beliefs, and involvement in online deviance. A stratified multistage cluster sample was used for data collection. The capital city of South Korea, Seoul, was stratified into four regional districts. A random sample of elementary and middle schools was drawn proportionate to the number of elementary and middle school students in these four districts. Then, students in one class among the randomly selected schools were surveyed. A total of 1,091 elementary and middle school students were enrolled in the survey.

The full sample consists of 586 males (53.7%) and 505 females (46.3%) ranging in age between 10 and 14. Details regarding recruitment and the overall design of the study can be found in Choi and Lee (2009). The data used in the present study have also been used to explore the interrelationships between low self-control and other variables (Baek, 2018; Choi & Yun, 2020) but have not been used to test the indirect effects of parenting variables through morality. Although the data are somewhat old, given that this data set provides us a unique opportunity to explore the relationship between parenting practices, moral beliefs, and cyberbullying, we believe our decision to use this data can be justified. Cases with missing values were removed from the analyses, resulting in a final sample of 779 students.

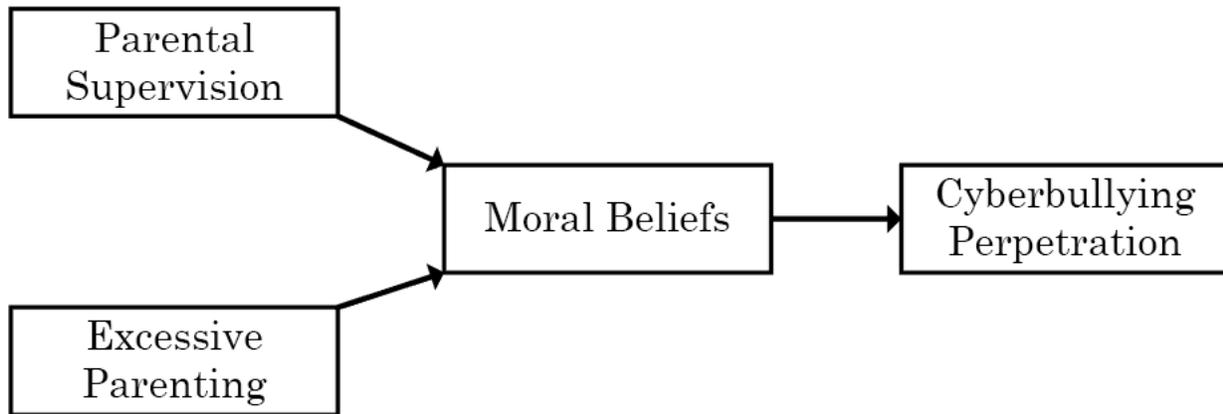


Figure 1. A statistical diagram of a simple mediation model for parenting practices and cyberbullying perpetration

Measures

Dependent variable. Self-reported cyberbullying is the main outcome variable. Subjects reported on their involvement in cyberbullying using the self-report of cyberbullying measure, asking them whether they have frightened someone by abusive or aggressive language while playing computer games or using the Internet during the last six months. When the respondent reported having engaged in cyberbullying, they were categorized into 1 (yes) and 0 (no) if otherwise.

Key independent variables. Our measure of moral beliefs is domain-specific. In other words, this measure was designed to capture moral beliefs that limit its scope to cyberbullying. Moral beliefs about cyberbullying were measured by two questions about the student's endorsement of online behaviors involving cyberbullying. The responses to these two items were solicited in response to a hypothetical situation. The scenario (See the Appendix) describes an individual (Ji-eun) who posts abusive comments under another person's (Byeong-su) photo on a website. Ji-eun also copied and pasted bad comments about Byeong-su to other websites. Respondents were instructed to read the scenario and to answer two questions related to it. Students were asked to rate how ethical they thought Ji-eun's online behaviors were (i.e., posting abusive comments, copying, and passing bad comments). Participants responded to these questions using a 5-point Likert-type scale 1 (certainly wrong) to 5 (certainly right). The two items were reverse coded and averaged

so that a higher score represents a higher level of moral standards regarding cyberbullying (Cronbach's alpha = .70).

Parental supervision is related to the concept of parental monitoring (Griffin, Botvin, Scheier, Diaz, & Miller, 2000). Parental monitoring involves parents' knowledge about their child's activities. Our measure of parental supervision includes three questions about the respondent's parents that are centered on computer use, each answered on a 5-point Likert scale, from 1 (strongly disagree) to 5 (strongly agree). This set of items included (a) "my parents make a strict time rule about using computers," (b) "my parents observe me when I am using the computer," and (c) "my parents know what I usually do when using the computer." The variable representing parental supervision is the mean score on these three items, with higher values indicating higher levels of parental supervision (Cronbach's alpha = .59, mean inter-item $r = .33$). Although the alpha for the parental supervision scale is below the .70 cutoff, this result can be attributed to the number of items in the scale. Briggs and Cheek (1986) noted that when the mean interitem correlation for the items is above a value of .2, the scale is acceptable, which is the case here. Excessive parenting is relevant to the concept of authoritarian control in the parenting literature (Baumrind, 1966, 1968). Authoritarian control involves coercive and restrictive discipline techniques and stresses the negative feature of control, such as excessive interference. Excessive parenting was measured as an average level of agreement (1 = strongly disagree, 5 = strongly agree) with the following two statements: (a) "my parents excessively interfere with my computer use, stressing me out" and "my parents often scold me because of my computer use." The responses to these two items were highly correlated (Cronbach's alpha = .74).

Control variables. Several known correlates of cyberbullying were included in the multivariate analyses to control for potential spuriousness. Low self-control has been shown to be associated with online deviance (Choi & Kruis, 2020a; Holt & Bossler, 2014). Low self-control was adopted from previous research and assessed using a four-item scale (Baek, Losavio, & Higgins, 2016; Choi & Kruis, 2020a). Although this measure of self-control differs from Grasmick et al.'s (1993) well-established self-control scale, the items adequately reflect different components under low self-control described by Gottfredson and Hirschi (1990). Additionally, researchers who used these items to capture low self-control successfully tested their hypotheses based on self-control theory (Baek et al., 2016; Choi & Kruis, 2020a). The following items were used: (a) "I tend to do my job without a plan," (b) "I always act on a whim," (c) "I often behave impulsively," and (d) "I behave without thinking much about what will happen later." Each item featured a five-point response set, ranging from 1 (strongly disagree) to 5 (strongly agree). The scale exhibited a high level of reliability (Cronbach's alpha = .81). Association with deviant peers can reinforce antisocial behavior (Akers, 2009), and this relationship is observed in an online setting (Choi & Yun, 2020). The measure of deviant friends was constructed using a single item asking respondents how many of their close peers engaged in the following four types of online deviance: (a) posting abusive comments about others, (b) illegally downloading music or movie files, (c) engaging in theft of game items, and (d) attempting to sell game items or other products fraudulently to make money. Closed-ended responses ranged from 1 (none) to 5 (six or more).

Additional demographic control variables were included in our multivariate analyses. These variables include: age (respondent's age in years), gender (1 = female; 0 = male), parental education (mean of both parents education level), and family structure (1 = living with both parents; 0 = all other living arrangements). Finally, socioeconomic status was measured with a single item asking respondents how well off they think their families were. The responses were reported on a five-point scale ranging from 1 (not very well) to 5 (very well off). Table 1 displays descriptive statistics for all variables used in our multivariate analyses.

Table 1. Descriptive Statistics

	M (%)	SD	Minimum	Maximum	Skewness	Kurtosis
Cyberbullying	14.73		0	1	1.99	1.98
Moral beliefs	4.797	.419	2	5	-2.55	7.87
Parental supervision	2.915	.928	1	5	1.18	0.69
Excessive parenting	1.829	.990	1	5	0.10	-0.38
Low self-control	2.444	.875	1	5	0.27	-0.04
Deviant peers	1.405	.912	1.00	5	2.44	5.48
Age	11.945	.875	10	14	-0.10	-1.08
Gender	46.29		0	1	0.15	-1.98
Parental education	3.4595	1.077	1	5	0.22	-1.12
Family structure (1 = Living with both parents)	91.37		0	1	-2.95	6.72
Socio-economic status	3.405	.710	1	5	0.38	0.20

Measures

Since moral beliefs were coded as continuous in the dataset, we conduct ordinary least squares (OLS) regression after checking on OLS regression assumptions to analyze whether or not parenting practices influence moral beliefs regarding cyberbullying (hypothesis 1 and 2). Our measure of moral beliefs is slightly skewed (= -2.550). However, this level of skewness is within an acceptable range. Kline (2016) indicated that the absolute value of skewness greater than 3 may cause concern or may warrant a different methodology, which was not the case in this study. Additionally, Tabachnick and Fidell (2013) noted that when the sample size is bigger than 200, a slight departure from the normality of skewness does not make a significant difference in the analysis. Although Likert or ordinal variables are not often continuous, it is common to take the mean of two or more ordinal variables to construct an approximately continuous variable (see also Norman, 2010; Sullivan & Artino, 2013). We averaged two items to create an approximately continuous variable, justifying our decision to use an OLS regression. Given the dichotomous coding of cyberbullying in the dataset, we use logistic regression to address whether or not parenting practices and moral beliefs influence students' engagement in cyberbullying (hypothesis 3 and 4). Considering the nonlinear nature of logistic regression when estimating mediation effects by standardizing path coefficients based on the binomial distribution variance, in addressing whether or not moral beliefs mediate the relationship between parenting practices and cyberbullying (hypothesis 5-7), we conduct mediation analyses with logistic regression using Hayes's (2017) process macro.

Results

As a first step to evaluate the mediation hypothesis, an OLS regression model was examined to establish an association between parenting practices and moral beliefs, the results of which can be found in

Table 2. Both of the two parenting variables were significantly associated with cyberbullying perpetration. Specifically, parental supervision was positively and significantly associated with moral beliefs regarding cyberbullying ($b = .037$, $p < .05$), whereas excessive parenting was negatively and significantly associated with moral beliefs ($b = -.047$, $p < .01$). These results were consistent with our predictions.

Table 2. OLS Regression Model Predicting Moral Beliefs about Cyberbullying

	b	SE
Parental supervision	.037*	.016
Excessive parenting	-.047**	.017
Low self-control	-.073***	.018
Deviant peers	-.049**	.017
Age	-.036*	.017
Gender	.086**	.030
Parental education	.012	.014
Family structure	-.010	.054
Socio-economic status	-.0078	.021
R2		.314
F ratio		9.326***

Note: Unstandardized coefficients are presented with standard errors in parentheses.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Increases in excessive parenting were associated with about a 27% increase in the odds of cyberbullying perpetration. Other significant predictors of cyberbullying perpetration in Model 1 were low self-control (OR = 1.751), deviant peers (OR = 1.460), being female (OR = .327), parental education (OR = .794), living with both parents (OR = .397), and socioeconomic status (OR = .675). A lower level of self-control and associating with deviant peers were both associated with higher levels of cyberbullying perpetration. Higher parental education, living with both parents, and higher socioeconomic status were all associated with lower levels of cyberbullying perpetration. Females were significantly less likely to engage in cyberbullying.

Model 2 in Table 3 included the moral beliefs variable. Moral beliefs were significantly and negatively associated with cyberbullying perpetration and one of the strongest predictors of cyberbullying perpetration (OR = .489). Parental supervision retained statistical significance when the moral beliefs variable was included in the models with a slight reduction in the magnitude of the coefficients. However, a significant direct effect of excessive parenting was reduced to non-significance when the moral beliefs variable was added to the regression models.

According to the results from Model 2 in Table 3, the relationships between parenting variables and cyberbullying perpetration appear to have been partially mediated by moral beliefs. To determine whether these indirect effects are statistically significant, we conducted mediation analyses with logistic regression using the bootstrapping method with bias-corrected confidence estimates (Hayes, 2017). The 95% confidence intervals (CIs) of the indirect effects were estimated with 5,000 bootstrap samples (MacKinnon, 2008). Table 4 shows the significant results of the mediation analyses. These confirmed that parental supervision was indirectly related to cyberbullying perpetration through moral beliefs (OR = .974; [95% CI = -.063, -.003])

and that excessive parenting was related to cyberbullying perpetration via moral beliefs (OR = 1.034; [95% CI = .003, .080]). Our confidence intervals did not capture 0, implying that the indirect effects are statistically significant. Confidence interval is superior to giving p-values because it includes information about statistical significance and the direction and strength of the effect (see Hayes, 2017).

Table 3. Logistic Regression Analyses Predicting Cyberbullying

	Model 1			Model 2		
	Coefficient	SE	OR	Coefficient	SE	OR
Moral beliefs				-.716***	.221	.489
Parental supervision	-.282*	.128	.754	-.262*	.129	.770
Excessive parenting	.235*	.113	1.265	.219	.115	1.244
Low self-control	.560***	.139	1.751	.486***	.143	1.625
Deviant peers	.378***	.106	1.460	.352***	.108	1.422
Age	.238	.137	1.269	.188	.140	1.207
Gender	-1.119***	.242	.327	-1.032***	.246	.356
Parental education	-.230**	.105	.794	-.247*	.108	.782
Family structure	-.923**	.342	.397	-.988**	.342	.372
Socioeconomic status	-.393*	.172	.675	-.402*	.176	.669
Nagelkerke's R ²		.250			.270	

Note: Unstandardized coefficients are presented with standard errors in parentheses.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 4. Bootstrapped Confidence Intervals for the Total and Indirect Effects

Path	Indirect effects	OR	Bootstrapping SE	Bootstrapping (BC 95% CI)	
				Lower	Upper
Parental supervision → Morality → Cyberbullying	-.026	.974	.016	-.063	-.003
Excessive parenting → Morality → Cyberbullying	.033	1.034	.020	.003	.080

Note: OR = odds ratio. BC = bias corrected

We used 5,000 replications for bootstrap resamples

Discussion

Research examining the mediation effects of parenting practices on cyberbullying perpetration via moral beliefs remains limited. This study set out to explore the interrelationships between parenting practices, moral beliefs, and cyberbullying perpetration to fill this gap in the literature and move this body of literature forward, both empirically and theoretically. In doing so, we ultimately identified the importance of eff-

ective parenting practices related to moral beliefs about cyberbullying and the adverse effects of excessive parenting on these moral beliefs and cyberbullying perpetration. Our research, using data from a sample of South Korean adolescents, yielded four key findings.

First, supporting both the first and second hypotheses, parenting variables were significantly associated with moral beliefs. Specifically, increases in parenting supervision significantly predicted increases in moral beliefs, whereas increases in excessive parenting significantly predicted decreases in moral beliefs. Considering that moral beliefs exerted a significant direct effect on cyberbullying perpetration (Kyriacou & Zuin, 2016; Perren & Gutzwiller-Helfenfinger, 2012), our results underscore the need to promote positive parenting practices to assist children in developing moral beliefs that will prevent them from engaging in cyberbullying perpetration.

Second, parenting variables were significantly associated with the likelihood of cyberbullying perpetration. Specifically, parental supervision significantly predicted reductions in the risk of cyberbullying perpetration, which is in line with the findings from prior research. Excessive parenting was also significantly and positively associated with cyberbullying perpetration. These findings together support previous literature regarding both the relationship between parental supervision and cyberbullying perpetration (Griffin et al., 2000; Ishoy, 2017) and the adverse effects of ineffective parenting, or excessive parenting, on child development (Elsaesser et al., 2017; Law, Shapka, & Olson, 2010). Our results involving the relationships between parenting practices and cyberbullying perpetration support the third and fourth hypotheses.

Third, the fifth hypothesis of the present study was that moral beliefs would lower cyberbullying perpetration levels. Our multivariate analyses indicate that moral beliefs were a strong predictor of cyberbullying perpetration, net of all other control variables. This result is congruent with previous studies, which have shown a strong relationship between various aspects of morality and antisocial behaviors (Wikström et al., 2012; Wikström & Svensson, 2010). The current study contributes to this body of literature by showing that moral beliefs were a key causal mechanism in explaining deviance in an online setting (Menesini, Nocentini, & Camodeca, 2013; Robson & Witenberg, 2013). Given this finding and its support for the relationship between moral beliefs and cyberbullying, this information can be used to help influence both parents and institutions to begin focusing more on establishing moral beliefs in youth in an attempt to reduce the likelihood that youth engage in cyberbullying, thus reducing the potentially damaging consequences of this type of online behavior (Brailovskaia et al., 2018; Kim et al., 2019).

Finally, our results supported the final hypothesis that moral beliefs mediate both of the relationships between parenting variables and cyberbullying perpetration. Parental supervision predicted significant increases in moral beliefs, which, in turn, reduced the odds of cyberbullying perpetration. Conversely, excessive parenting lowered moral beliefs, which consequently led to increases in the likelihood of cyberbullying perpetration. Our findings emphasize the importance of parenting practices by demonstrating that parenting practices directly affect cyberbullying and indirect effects by developing moral beliefs. It appears that the study of the causal chain involving parenting practices and moral beliefs is an issue worthy of scholarly attention.

Our findings have some policy implications. The main message from the results is that we should take parenting practices seriously because it can significantly affect the risk of cyberbullying perpetration among

their children directly and indirectly through moral beliefs. Early intervention programs that focus on improving parenting skills should be continued (Piquero et al., 2016). Relying on intervention programs designed to foster parenting skills and positive communication skills, such as Multisystemic Therapy (Henggeler, 1999; Jonson & Cullen, 2011) and Functional Family Therapy (Alexander, Pugh, & Parsons, 1998; Skowrya & Cocozza, 2007), may prove to be fruitful in this endeavor. Although both of these intervention-type programs mainly focus on at-risk or criminally involved youth, these intervention programs can be tailored to specifically focus on identifying the optimal spot between the proper level of parental supervision and excessive parenting among families before youth begin demonstrating undesirable behaviors. Such an approach could help establish a higher level of moral beliefs in youth by incorporating inductive discipline and authoritative control based on child-oriented techniques, thus simultaneously increasing moral beliefs and reducing the likelihood of cyberbullying perpetration among youth. Authoritative control is important in this process as it involves helping children with cognitive reasoning and understanding situations from another person's point of view (Hoeve et al., 2009). It would also be critical for future research to continue to investigate other specific evidence-based practices for parents to increase moral beliefs among their children.

Several data limitations must be mentioned. First, due to the nature of the cross-sectional data used in this study, the temporal order concerns can limit our findings. Future research can be designed longitudinally and prospectively to measure key independent variables at one time and cyberbullying perpetration at a later time, as well as changes in moral beliefs. Second, some scales used in this study are less-than-ideal measures. For instance, scholars have developed measures to capture various aspects of morality (e.g., moral emotions or moral values) (Hirtenlehner & Treiber, 2017; Svensson, 2015). Replication of our findings with established measures of moral beliefs would yield further insight into how parenting practices shape the development of different aspects of moral beliefs in children. Third, our data are somewhat outdated, and considering that the patterns of cybercrime change rapidly, it would be critical to revisit our research questions with more recent data sets. Additionally, our data were collected in one city in one country; our findings' external validity remains unclear. It should also be noted that the parenting measures in our study were not derived from parents but respondents themselves, which can cause a common method bias. Finally, we examined the impact of only a few aspects of parenting practices on cyberbullying perpetration. Previous research has shown that there are more parenting categories than parental supervision and excessive parenting that can be linked to antisocial behaviors (e.g., indulgent or neglectful parenting) (Steinberg, BlattEisengart, & Cauffman, 2006). We call for future research to examine the issues examined in this study with different parenting practices.

Conclusion

Despite the limitations that are noted, our work provides some evidence that parenting practices are critical in the development of moral beliefs and cyberbullying perpetration. Given the significance of parenting, further consideration of parents' role in instilling and supporting moral beliefs among their children should be a high priority for criminological research. It remains unknown whether these same results will be shown in other regions and cultures worldwide and the effect that the many other parenting practices may have on the development of moral beliefs and cyberbullying perpetration. Nonetheless, this study expands the literature surrounding cyberbullying perpetration and its parenting-based situational correlates, as well as a theoretical application that helps explain these relationships.

Appendix

[Situation] Ji-eun's abusive comments on the Internet

Ji-eun saw the photo of Byeon-su, who she does not like on the Internet. She left abusive comments under his photo on the website. She visited the website a few days later and saw other bad comments about Byeong-su's childhood. She copied and passed these bad comments to the website where her classmates often visit.

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