Parenting in a digital age: A review of parents' role in preventing adolescent cyberbullying

Caitlin Elsaesser[a],[*], Beth Russell[b], Christine McCauley Ohannessian[c], Desmond Patton[d]

[a] University of Connecticut, School of Social Work, 38 Prospect St., Hartford, CT 06103, United States
[b] Department of Human Development and Family Studies, University of Connecticut, 348 Mansfield Road, Unit 1058, Storrs, CT 06269-1058, United States
[c] Center for Behavioral Health, Connecticut Children's Medical Center, 282 Washington Street, Hartford, CT 06106, United States
[d] Columbia Univeristy, School of Social Work, 1255 Amerstdam Ave, New York, NY, United States

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ABSTRACT

While parents have a critical influence on reducing adolescent risk taking, adolescents' access to online spaces presents significant and novel challenges to parents' ability to reduce their youth's involvement in cyberbullying. The present study reviews the existing literature on parents' influence (i.e., parental warmth and parental monitoring) on adolescent cyberbullying, both as victims and perpetrators. 23 mostly cross sectional articles were identified for this review. Findings indicate that parental warmth is consistently associated with lower cyberbullying, both as victims and perpetrators. For parental monitoring, strategies that are focused on parental control, such as restricting the Internet, appear to be only weakly related to youth's involvement in cyberbullying victimization and perpetration. In contrast, strategies that are more collaborative with in nature (e.g., evaluative mediation and co-use) are more closely connected to cyberbullying victimization and perpetration, although evidence suggests that the effectiveness of these practices varies by sex and ethnicity. Results underscore the need for parents to provide emotional warmth that might support adolescent's disclosure of online activity. Implications for practice and future research are reviewed.

1. Introduction

Adolescence is a developmental period marked by considerable change, including puberty, cognitive development, identity exploration, and the development of autonomy (Smetana, Campione-Barr, & Metzger, 2006). As adolescence progresses, youth tend to spend less time with their family and more time with their peers (Smetana et al., 2006). Juggling this amount of simultaneous change presents significant challenges, and it is therefore not surprising that during this period, adolescents are at increased vulnerability to psychological problems (Doremus-Fitzwater, Varlinskaya, & Spear, 2010; McLaughlin & King, 2014; Negriff & Susman, 2011). In addition, risk taking during adolescence tends to increase, leading to increased rates of binge drinking, risky sexual activity, and crime (Steinberg, 2007).

The bio-ecological theory of development emphasizes that human development is a function of both the characteristics of the individual and the environment in which one lives (Bronfenbrenner, 1999). One environmental context that has become increasingly salient in the lives of adolescents is the Internet. Today, nearly all U.S. adolescents have access to and use the Internet; a recent survey of 12 to 17 year olds indicates that 95% of adolescents in the U.S. are online, and 74% access the Internet on cell phones, tablets and other mobile device (Pew Internet & American Life Project, 2014). It is estimated that adolescents in the U.S. now use technology more than 7.5 h a day (Rideout, Foehr, & Roberts, 2010) and that 25% of this time is spent using multiple forms of media simultaneously (Brown & Bobkowski, 2011).

The Internet has provided new platforms for risk taking, including adolescent involvement in online interpersonal violence. While youth are involved in many forms of online interpersonal violence (e.g., cyber dating violence, cyber-banging), cyberbullying, both as a victim and perpetrator, is the form of online interpersonal violence that has received the most significant attention. Tokunaga (2010) defines cyberbullying as "any behavior performed through electronic or digital media by individuals or groups that repeatedly communicates hostile or aggressive messages intended to inflict harm or discomfort on others" (p. 278). Many studies have indicated that this form of online interpersonal violence is widespread among youth, with some studies suggesting that nearly 75% of school-age youth experience cyberbullying at least once a year (Juvonen & Gross, 2008; Katzer, Fetchenhauer, & Belschak, 2009). Given this high prevalence and the

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* Corresponding author.
E-mail addresses: caitlin.elsaesser@uconn.edu (C. Elsaesser), beth.russell@uconn.edu (B. Russell), COhannessian@connecticutchildrens.org (C.M. Ohannessian), dp2787@columbia.edu (D. Patton).

likelihood adolescents will continue to use the Internet for socializing, cyberbullying represents a growing public health problem.

1.1. Parents' influence on adolescent risk taking

Parents have a critical influence on reducing youth risk taking even through adolescence as youth become more peer-focused (Steinberg & Silk, 2002). Although a range of salient parenting attributes have been proposed, two central dimensions have been relied on to reflect the quality of parenting: warmth and control. The warmth dimension of parenting – also called support and responsiveness – refers to parental behaviors that help the youth feel comfortable, accepted, and approved (Rollins & Thomas, 1979). Parental warmth offered to children through nurturance, warmth, and affection is significantly associated with positive outcomes (i.e., academic achievement, decreased substance use and greater psychological adjustment) (Gordon & Cui, 2012; Koning, van den Eijnden, Verdurmen, Engels, & Vollebergh, 2012; Minaie, Hui, Leung, Toumbourou, & King, 2015; Russell & Gordon, 2017). Moreover, families that are warm and responsive provide a context for youth to feel safe and to process difficult emotions, reducing involvement in bullying both as perpetrators and victims (Georgiou, 2008; Ok, Melahat Halat, & Aslan, 2010).

Parental monitoring – one aspect of the control dimension – has been defined as a set of parenting behaviors that involves attention to and tracking of youth whereabouts, activities, and friendships (Dishion & McMahon, 1998). Parental monitoring has been connected to lowering youth's inappropriate or risky behaviors, including involvement in violence and victimization (Beck, Boyle, & Boekeloo, 2003; Lac & Crano, 2009). Youth who are poorly monitored are at higher risk for bullying involvement, both as perpetrators and victims (Espelage, Bosworth, & Simon, 2000; Hong & Espelage, 2012). While many studies rely on reports of parental *knowledge* of youth's activities, the pioneering work of Stattin and Kerr (2000) suggests that *how* parents gain access to that knowledge is a critical distinction for the protective influence of parental monitoring. Stattin and Kerr (2000) propose that parental monitoring consists of youth disclosure, parental control and parental solicitation of activities. Evidence from their work indicates that it may be youth disclosure of activities – and not parental solicitation or control – that is connected to lower risk behaviors (Kerr & Stattin, 2000; Kerr, Stattin, & Burk, 2010). For example, in a longitudinal study of the influence of parental control, parental solicitation, and youth disclosure on delinquency among adolescents, only youth disclosure predicted changes in delinquency over time (Kerr et al., 2010).

The dimensions of parental warmth and parental monitoring co-exist, and the parenting literature has demonstrated the importance of identifying not only the specific contribution of individual family characteristics, but also their synergistic effects (e.g., parenting styles) (Baumrind, 1991; Everri, Mancini, & Fruggeri, 2014; Gorman-Smith, Henry, & Tolan, 2004). Four parenting styles have been delineated on the balance of control and warmth: authoritarian (low warmth, high control), authoritative (high warmth and control), permissive (high warmth and low control), and neglecting (low warmth and control) (Maccoby & Martin, 1983). Authoritative parenting reflects a degree of sensitivity and developmental awareness through supportive parenting that scaffolds adolescents' independence as they leave childhood and mature into young adults (Baumrind, 2013; Darling & Steinberg, 1993). Evidence suggests that families that exercise high levels of control accompanied by high levels of warmth are particularly effective in reducing the risk for a range of risks, including violence exposure (Gorman-Smith et al., 2004), delinquency, and externalizing problems (Steinberg, Blatt-Eisengart, & Cauffman, 2006; Steinberg, Darling, & Fletcher, 1995). Taking the evidence on families and youth risk behaviors together, it is clear that parents have an important role in reducing adolescent risking taking broadly. Less work has examined families' influence specifically on cyberbullying, yet existing evidence

suggests parents have an important role.

1.2. Parenting in a digital world

Adolescents' access to online spaces presents significant and novel challenges to parents' ability to reduce their youth's involvement in cyberbullying. Online, adolescents can consume content and connect with others in ways that often are not mediated by parents (Goldstein, 2015). With access to the Internet, adolescents now have the ability to communicate with others from anywhere without leaving their room. Moreover, parents often lack sufficient knowledge of rapidly changing social networking technology, creating another barrier to sufficiently monitoring online activity. One study of Canadian adolescents found that while parents report familiarity with email, they are the least familiar with social networking platforms, a disconcerting finding given that adolescents report that social networking platforms are the most frequent location of cyberbullying (Cassidy, Brown, & Jackson, 2012).

Emerging evidence suggests that parents struggle to control their adolescents' activity online, including youth involvement in cyberbullying. Parents underestimate the amount of time their adolescent spends on the Internet and the extent of negative interactions present in this setting (Dehue, Bolman, & Völlink, 2008; Liau, Khoo, & Ang, 2008). For example, studies conducted in Europe (Dehue et al., 2008) and Canada (Cassidy et al., 2012) comparing parental and student self-reports of cyberbullying have found that parents underestimate the extent to which adolescents participate in cyberbullying as victims and perpetrators. In a qualitative study of parent-adolescent pairs in the U.S., parents expressed a sense of loss of control over their adolescents' online activities (Erickson et al., 2015). Some scholars suggest that youth access to online spaces, combined with parents' barriers to controlling such access, has shifted the very nature of autonomy during adolescence, increasing the autonomy adolescents have traditionally had from their parents (Bradley, 2005; Erickson et al., 2015).

Yet in spite of the challenges that parents face in monitoring their adolescents' online experiences, parents have a critical role in prevention and intervention efforts of cyberbullying. While most traditional bullying occurs at school – highlighting the important role of educators in prevention – most youth who experience cyberbullying do so while at home (Dehue et al., 2008). Moreover, parents often have direct influence over adolescents' access to electronic devices. Given the common occurrence of cyberbullying at home and parents' influence on access to devices, the importance of the family's role in preventing online interpersonal violence is considerable.

A number of studies have emerged over the years examining the connection between the family and cyberbullying. However, the absence of a literature review that synthesizes existing research on the connection between the family and cyberbullying is notable. An exception is Kowalski, Giumetti, Schroeder, and Lattanner (2014)'s comprehensive meta-analysis of cyberbullying research, which includes a section on parental factors as a correlate of cyberbullying. Although Kowalski et al. (2014)'s review provides a critical summary of parents' role in cyberbullying, no review to date has considered the evidence of family's influence on cyberbullying by distinct parenting qualities (e.g., warmth, control), as well as how the influence of these factors might vary by sex and ethnicity. A review of the evidence on the relation between specific parenting strategies and cyberbullying is important, since this might offer concrete guidance on gaps in knowledge as well as intervention strategies.

2. Method

2.1. Goals of the study

The goal of the present study is to review the existing literature on parental influence (i.e., parental warmth and parental monitoring) on adolescent cyberbullying, both as perpetrators and victims. Given the

paucity of studies in this area of research, we draw on studies regardless of the geographic location of the sample. We further summarize evidence of sex and ethnic differences in the above relations. Critical gaps in existing knowledge and recommendations for areas of future research also are highlighted.

2.2. Search strategies and inclusion criteria

Systematic reviews of the literature take a variety of forms and use methods depending on the purpose for the review (Bem, 1995; Marsh, Angell, Andrews, & Curry, 2012). Methods used in this systematic review were consistent with methods used in previous systematic reviews of cyberbullying and youth outcomes (Della Cioppa, O'Neil, & Craig, 2015; Patton et al., 2014; Raskauskas & Huynh, 2015; Selkie, Fales, & Moreno, 2016). We searched the literature for relevant studies using keywords that relate to cyberbullying, as well as parenting, and limited the focus to youth between the ages of 10 and 18. Cyberbullying related terms included "cyberbullying," "cybervictimization," "cyberbanging," "bullying," "victimization," and "interpersonal violence." Terms to specify online experiences of victimization included "online," "cyber," "digital," "Internet," and social networking sites, including Facebook and Twitter. Terms related to the family included "parent," "monitoring," "parental warmth," "parent-child relationship," "parental support," "parenting styles" and "family." We searched for articles published prior to October 2016. The age range was incorporated into the search by including such terms as "teen," "youth," and "adolescent."

Related publications were obtained with computer database search in Science Direct, PsycInfo, PubMed, SCOPUS, Medline and Google Scholar. Titles and abstracts of all articles were reviewed and for articles that appeared relevant, the full text version was retrieved and evaluated for inclusion in the review. Articles were included in the review if they were peer-reviewed, the full text was available, if they explored the relation between family related variables and adolescent online interpersonal violence, and were written in English.

3. Results

Of the 84 articles that were examined in the initial search of the literature, 23 articles fit the criteria outlined above and were included in this review (see Table 1). Two articles were meta-analyses that included data on the connection between family and cyberbullying. Of the 21 relevant empirical studies, 19 were cross sectional and three were longitudinal. Nine drew on samples from the U.S., four from Canada, eight from Europe, and two from Asia.

3.1. Parental warmth

We identified ten articles that examined the relation between constructs related to parental warmth and cyberbullying (see Table 2). With one exception (Cappadocia, Craig, & Pepler, 2013), cross sectional

Table 1
Peer reviewed studies of the influence of families on adolescent cyberbullying: Descriptive characteristics (N = 23).

Review articles	2
Timeline	
Cross sectional	19
Longitudinal	3
Sample region	
U.S.	9
Canada	4
Europe	8
Asia	2

studies examining the connection between parental warmth and cyberbullying consistently found that warmth was protective against both victimization and perpetration (e.g., Accordino & Accordino, 2011; Brighi, Guarini, Melotti, Galli, & Genta, 2012; Ybarra & Mitchell, 2004). In a meta-analysis of risk factors for cyberbullying, including parental support, researchers found that across five studies, parental support had a small but significant correlation with lower cyberbullying perpetration (− 0.04) and cyberbullying victimization (− 0.08) (Kowalski et al., 2014). In a longitudinal sample of 1416 Greek adolescents, for example, parental social support predicted lower relates of cyberbullying as perpetrators and victims one year later, whereas social support from friends and school did not (Fanti, Demetriou, & Hawa, 2012). A similar cross sectional study drawing on adolescents in the U.S. found that parental support was associated with lower cyberbullying as victims and perpetrators (Wang, Iannotti, & Nansel, 2009).

Reinforcing these findings are studies that have examined the relation between cyberbullying and parental attachment – a concept closely related to family support that reflects adolescents' positive experiences of trust and security with their parents (Armsden & Greenberg, 1987). A cross sectional study of 1808 Taiwanese middle school students found that lower parental attachment was associated with higher levels of cyberbullying perpetration (Chang et al., 2015). In another cross sectional study examining Greek adolescents, lower parental bonding similarly was associated with higher levels of cyberbullying victimization and perpetration (Floros, Siomos, Fisoun, Dafouli, & Geroukalis, 2013).

3.2. Parental monitoring

We identified four studies that examined whether parental monitoring of adolescents' overall whereabouts and activities reduced cyberbullying perpetration and victimization (see Table 2). Evidence from this largely cross sectional literature suggests that parental monitoring of adolescent activities (not specifically those online) is negatively related to cyberbullying as perpetrators and victims. The meta-analysis previously mentioned focusing on risk factors for cyberbullying found that across five studies, parental monitoring was significantly correlated with lower cyberbullying perpetration (− 0.07) and cyberbullying victimization (− 0.06) (Kowalski et al., 2014). For example, a recent study drawing on a nationally representative cross sectional sample of 629 U.S. adolescents found that adolescent reports of parental monitoring were associated with lower levels of online harassment (Khurana, Bleakley, Jordan, & Romer, 2014). These results are in line with previous cross sectional studies examining the association between parental monitoring and cyberbullying perpetration and victimization drawing on samples of Canadian adolescents of European and Asian descent (Law, Shapka, & Olson, 2010) as well as White American adolescents (Ybarra & Mitchell, 2004). Longitudinal evidence also supports these results; a study of Canadian adolescents indicated that poor family management (a measure reflecting parents' awareness of youth's activities closely related to parental monitoring) when adolescents were 15 years old significantly predicted higher adolescent reports of past year cyberbullying perpetration four years later (Hemphill & Heerde, 2014).

3.2.1. Parental mediation of the internet

We identified nine studies that examined whether parental monitoring specifically of adolescent activities online – also called parental mediation of technology – reduces adolescent involvement in cyberbullying as perpetrators and victims (see Table 2). Parental mediation of technology refers to parents' involvement in the relationship between youth and the media (Livingstone & Helsper, 2008), and includes 1) *restrictive mediation* (i.e., limiting and controlling adolescent Internet activities); 2) *evaluative mediation* (i.e., open discussion concerning Internet and joint creation of rules); and 3) *co-using* (i.e., parents' active participation with youth's online use, including recommending websites

Table 2
Description of studies used in this systematic review (N = 23).

Study	Country	Sample	Parenting behavior	Cyberbullying behaviors	Findings	Sex or ethnic differences examined?
Accordino and Accordino (2011)	United States	124 middle school students, cross sectional	Closeness of parent-child relationship	Victimization	Students with close parental relationships reported lower cyberbullying victimization	No
Brighi et al. (2012)	Italy	2326 secondary school students, cross sectional	Family self-esteem Parental rejection	Victimization	Lower family self-esteem associated with cybervictimization for males; parental rejection associated with cybervictimization for females	Sex differences in relations assessed
Cappadocia et al. (2013)	Canada	1972 secondary school students, longitudinal	Parental communication Parental school support	Perpetration and victimization	Parental factors did not predict cyberbullying perpetration or victimization	No
Chang et al. (2015)	Taiwan	1808 junior high students, cross sectional	Parental attachment Parental mediation of technology	Perpetration and victimization	Parental attachment associated with lower cyberbullying perpetration and victimization. Parental restrictive mediation associated with lower cyberbullying perpetration and victimization.	No
Chen et al. (2016)	Singapore	Meta analysis of 81 studies	Review of factors related to cyberbullying victim and perpetrator, including parental interaction and parental mediation	Perpetration and victimization	Parental interaction and parental mediation predicted lower cyberbullying perpetration. Parental mediation of technology use predicted only lower cyber victimization. Country of origin moderated association between parent interaction and cyberbullying perpetration	Ethnic differences in relations assessed (country of origin)
Dehue et al. (2012)	Netherlands	1184 youth ages 10 to 14, cross sectional	Parental responsiveness and demandingness Parenting styles	Perpetration and victimization	Youths with authoritarian and neglectful parents cyberbullied and were cyberbullied more than youths with authoritative and permissive parents, but these differences were non-significant.	No
Fanti et al. (2012)	Cyprus	1416 adolescents, longitudinal	Family social support	Perpetration and victimization	Family social support associated with lower cybervictimization and cyberbullying perpetration.	No
Floros, Paradeisioti, Hadjimarcou, Mappouras, Kalakouta, Avagianou, & Siomos (2013)	Cyprus	2684 secondary school students, cross sectional	Parenting styles	Perpetration and victimization	Authoritarian parenting style was associated with cyberbullying perpetration.	No
Floros, Siomos, Fisoun, Dafouli, & Geroukalis (2013)	Greece	2017 high school students, cross sectional	Parental online security practices Parental bonding	Perpetration and victimization	Parental online security practices were associated with lower likelihood of cybervictimization but not cyberbullying perpetration. Parental bonding was not associated with cyberbullying perpetration or cybervictimization	No
Helweg-Larsen, Schütt, Larsen (2012)	Denmark	3707 secondary school students, cross sectional	Parental supervision of internet	Victimization	Parental surveillance of adolescents' Internet associated with lower risk of cybervictimization	No
Hinduja & Patchin (2013)	United States	4441 middle and high school students, cross sectional	Parental sanction for cyberbullying	Perpetration	Parental sanction for cyberbullying associated with lower cyberbullying perpetration	No
Khurana et al. (2015)	United States	629 secondary school students, cross sectional	Parental monitoring Parental internet restriction	Victimization	Parental monitoring and internet restriction were associated with lower cybervictimization. The effect of parental monitoring was greater than parental internet restriction. The effects did not differ by sex.	Sex differences in relations assessed
Kowalski et al. (2014)	United States	Meta-analysis of risk factors for cyberbullying across Australia, Asia, Europe, and North America.	Parental monitoring Parental support	Perpetration and victimization	Parental monitoring and parental support were significantly associated with cyber perpetration and victimization. Parental control of technology was significantly associated with lower cybervictimization	No
Law et al. (2010)	Canada	733 adolescents aged 10–8, cross sectional	Parental control of technology Parent solicitation of online activities Child disclosure of online activities	Perpetration	Adolescent disclosure of online behaviors, but not parental solicitation, was negatively associated with cyberbullying perpetration	No
Low and Espelage (2013)	United States	1023 middle school students, longitudinal	Parental monitoring	Perpetration	Parental monitoring was associated with higher levels of cyberbullying perpetration, but only for White females	Differences in relations assessed by sex and ethnicity (White versus African American)

Table 2 *(continued)*

Study	Country	Sample	Parenting behavior	Cyberbullying behaviors	Findings	Sex or ethnic differences examined?
Makri-Botsari and Karagianni (2014)	Greece	396 secondary school students, cross sectional	Parenting style	Perpetration and victimization	Adolescents with authoritative parents exhibited the lowest levels of cyberbullying perpetration while adolescents with authoritarian parents the highest. Parenting style was not associated with cybervictimization.	No
Martinez-Herves, Kramer, & Hickey (2014)	United Kingdom	2218 secondary students, cross sectional	Family functioning Parental controls	Perpetration and victimization	Worse family functioning was associated with higher cyberbullying perpetration	No
Mesch (2009)	United States	935 secondary school students, cross sectional	Parental mediation of the internet	Victimization	Of all restrictive mediation techniques, only monitoring web sites decreased cybervictimization. Existence of rules on sites that youth could visit was associated with lower cybervictimization.	No
Mishna et al. (2012)	Canada	2186 middle and high school students, cross sectional	Parental mediation of the Internet	Perpetration and victimization	Parental mediation of the Internet was not associated with being a victim or perpetrator, although parental use of blocking programs was associated with lower likelihood of being *both* a victim and perpetrator.	No
Navarro et al. (2012)	Spain	1068 youth from rural schools ages 10–12 years, cross sectional	Parental mediation of the Internet	Victimization	Only restrictive mediation and joint creation of rules were associated with lower cybervictimization. Other parental mediation strategies were not associated with victimization.	No
Shapka and Law (2013)	Canada	518 secondary school students, cross sectional	Parental control Parental solicitation Child disclosure	Perpetration	Child disclosure was associated with lower cyber-aggression. Higher parental control and lower parental solicitation were linked more closely with lowered cyber-aggression for East Asian adolescents relative to their peers of European descent.	Differences in relations assessed by sex and ethnicity (East Asian versus European descent)
Wang et al. (2009)	United States	7182 secondary school students, cross sectional	Parental support	Perpetration and victimization	Higher parental support was associated with lower cyberbullying perpetration and victimization.	No
Ybarra and Mitchell (2004)	United States	1501 secondary school students, cross sectional	Emotional closeness Parental monitoring Parental discipline	Perpetration and victimization	Lower parental monitoring and poor emotional bond associated higher likelihood aggressor status. Discipline unrelated to likelihood of identifying as aggressor or victim	No

and participating in online activities).

Studies that compare the effectiveness of restrictive versus evaluative mediation suggest that evaluative mediation (where youth are involved in creating rules with their parents) is more effective than restrictive mediation (where parents make decisions unilaterally). For example, in a cross sectional sample of 935 mostly White adolescents in the U.S., researchers assessed the influence of six different parental mediation techniques on cyberbullying (as victims) (Mesch, 2009). Results indicated that parental use of restrictive mediation (i.e., limiting and controlling their adolescent's Internet activities) was unrelated to cyberbullying, while evaluative mediation (i.e., open discussion about the Internet and co-creation of rules) was associated with lower cyberbullying. Findings that restrictive mediation is less effective than evaluative mediation for cyberbullying victimization were replicated in a cross sectional sample of rural Spanish adolescents (Navarro, Serna, Martínez, & Ruiz-Oliva, 2012).

In line with these studies, evidence indicates that restrictive mediation is minimally effective in reducing rates of cyberbullying as both a victim and perpetrator. For example, one cross sectional study of 2186 Canadian adolescents found that parental supervision of Internet use was unrelated to cyberbullying as perpetrators and victims, whereas reports of parents using blocking programs for the Internet was associated with a *higher* likelihood of youth reporting involvement in cyberbullying as both perpetrators and victims (Mishna, Khoury-Kassabri, Gadalla, & Daciuk, 2012). Another study of adolescents in the U.S. found that restrictive mediation was only related to lower levels of cyberbullying as victims indirectly, and that its impact was 26 times lower than parental monitoring of overall youth activities (Khurana et al., 2014). A meta analysis found that across three studies reviewed, totaling a sample size of 1751, the correlation between parental control of technology and cyberbullying victimization was 0.01 (Kowalski et al., 2014), suggesting a minimal connection between parental restriction of the Internet and cyberbullying.

One previous review of the literature found evidence to the contrary. A meta-analysis of factors predicting cyberbullying indicated that overall, parental mediation of technology is related to lower cyberbullying perpetration and victimization. Researchers found in a review of six studies that parental mediation had a significant but weak association with both cyberbullying perpetration and victimization (for both, the average effective size was -0.07 across six studies) (Chen, Ho, & Lwin, 2016). However, this study aggregated findings related to different parental mediation strategies (i.e., restrictive mediation, evaluative mediation, co-using), and as our findings suggest that some of these mediation strategies are effective, while others are not, aggregating across all mediation techniques is likely problematic. Separately, a cross sectional study of Greek adolescents found that youth who reported any cybervictimization had significantly lower mean levels of parental security practices (e.g., use of parental control and content filter programs) compared to youth who reported not; there was no mean difference for cyberbully perpetration (Floros, Siomos, et al., 2013). It is important to note, however, that this was a cross sectional analysis of mean differences of parental security practices and did not adjust for other important covariates; therefore, the inference about the strength of this relation may be limited.

Parental monitoring consists of both parental efforts to gain information about youth activities and youth's disclosure (Kerr et al., 2010). While the studies reviewed above examine either the influence of parents' behaviors or parental knowledge (without clarity as to how the knowledge was gained), one study additionally examined whether youth disclosure of online activities was related to cyber aggression. In a Canadian cross sectional sample, researchers found that parental control and monitoring of online activities (i.e., parental behaviors) were unrelated to online aggression, but adolescent self-disclosure of online behaviors was significantly and negatively related to online aggression (Law et al., 2010). Authors in this study suggest that knowledge gained by parents through child disclosure may reflect an open

and caring relationship with their parents, and – citing the broader parenting literature (Kerr & Stattin, 2000) – posit that child disclosure may be linked more closely with adaptive online youth behavior than parental knowledge gained through parental efforts to control youth online activities.

3.3. Parenting styles

Identifying the specific contribution of individual parenting strategies (i.e., monitoring and warmth) is one approach to understanding how parents protect youth from harm. However, the parenting literature has demonstrated that these dimensions co-exist and influence each other in parenting styles (Baumrind, 1991), and not considering how family characteristics co-occur may present a limited picture (Gorman-Smith et al., 2004). We identified three studies that examined how parenting styles, based on balance of control (via monitoring) and warmth, related to cyberbullying victimization and perpetration. In a cross sectional study of 396 Greek adolescents, researchers assessed whether the frequency of cyberbullying perpetration and victimization differed by youth reports of parenting style. Results indicated that youth with authoritarian parents (i.e., low warmth, high control) had significantly higher mean levels of perpetration than youth with authoritative parents (i.e., high warmth and control); parenting style was unrelated to victimization (Makri-Botsari & Karagianni, 2014). Similar findings were indicated in a cross sectional study of Cyprus youth (Floros, Paradeisioti, et al., 2013) and in a cross sectional study of youth from the Netherlands (Dehue, Bolman, Vollink, & Pouwelse, 2012). Together, these studies suggest that parenting styles may be more closely related to the perpetration of cyberbullying than victimization. However, longitudinal studies are needed to clarify the directionality of this relationship.

3.4. Subgroup differences

We identified four studies that examined sex differences and three studies that examined ethnic differences in the influence of parenting on online interpersonal violence (see Table 2). These studies suggest that the parental influence on cyberbullying may differ depending on youth characteristics. For example, in a cross sectional study of Canadian adolescents of Asian and European descent, researchers found that parental control was more closely associated with lower reports of cyberbullying for Asian than White adolescents (Shapka & Law, 2013). The authors note that high levels of parental control over Asian adolescents' online activities may be culturally appropriate, and might not undermine adolescent/parent relationships in the way it might for adolescents of European descent. In line with this possibility, among the few studies to find that restrictive mediation was effective in reducing cyberbullying drew on a sample of Asian youth. In a cross-sectional study of 1808 middle school students in Taiwan, higher restrictive mediation (here, setting rules about which websites can be visited) was associated with lower likelihood of cyberbullying as perpetrators and victims in a logistic regression (Chang et al., 2015).

Of note, another study examining ethnic and sex differences found that parental monitoring was associated with *higher* levels of cyberbullying for certain groups. In a U.S.-based longitudinal study of 1023 African American and White early adolescents, parental monitoring (i.e., adolescent reports of parental awareness of activities and friends) was associated higher levels of later cyberbullying perpetration, but only for White females (Low & Espelage, 2013). While not assessed directly, the results of this study suggest the possibility that parents may increase monitoring in response their adolescent's cyberbullying perpetration. In contrast, a study of U.S. adolescents did not find evidence of sex differences in the impact of parental monitoring on adolescent cyberbullying victimization (Khurana et al., 2014). The above studies point to the complex role of adolescent characteristics in the family's role for cyberbullying and underscore the need for more studies that

disaggregate findings by sex and ethnicity.

4. Discussion

The aim of the current study was to review the relationship between family characteristics – specifically, parental warmth and parental monitoring – and adolescent cyberbullying involvement as perpetrations and victims. Our review suggests that the effectiveness of parental mediation of technology, a specific form of monitoring, depends on the form of mediation. Mediation strategies that are focused on parental control, such as restricting the Internet, appear to be only weakly related to youth's cyberbullying perpetration and victimization. In contrast, mediation strategies that are more collaborative with in nature (e.g., evaluative mediation and co-use) are more closely connected to cyberbullying perpetration and victimization. Dimensions of family functioning related to warmth are consistently connected to lower risk for both victimization and perpetration. While we found only four studies that examined the connection between parenting styles and cyberbullying, evidence suggests that authoritative parenting style, which combines high levels of warmth and control, is associated with lower cyberbullying perpetration.

Our findings underscore that parents who collaboratively work with their adolescent to safely navigate the Internet are more likely to protect against cyberbullying than those who implement restrictions without youth input. With rapidly changing technology and youth who are adept at adopting these changes, adolescents are likely to find ways around restrictive rules and barriers that parents create to prevent access to particular sites and platforms. It also is important to note that the language adolescents use to threaten each other online is complicated and nuanced and parents may not understand what their youth are actually saying online. For example, a recent study examined the perspectives of violence prevention workers who work with adolescents living in violent, urban areas (Patton, Eschmann, Elsaesser, & Bocanegra, 2016). Adults interviewed in this study emphasized that they were often best able to identify threatening social media posts (e.g., a photo of a youth with his hat tilted to the side) with the assistance of adolescents' own interpretations. Parents who collaborate with their adolescent to understand what is threatening online are more likely to be effective in protecting them from victimization.

Our observation that parental monitoring that occurs in the context of an open and warm relationship with the adolescent is more likely to be effective in reducing cyberbullying involvement is consistent with the broader parenting literature. Countless studies have shown that the use of authoritative parenting (compared to other parenting styles) is associated with better adolescent adjustment, including better school performance and lower levels of depression, anxiety, and delinquency (Steinberg & Morris, 2001). Our findings also are consistent with Stattin & Kerr's emphasis on the importance of youth disclosure – as opposed to parental control – in parental monitoring. Knowledge about youth activities gained through a young person's free disclosure likely reflects a close, warm relationship where adolescents are comfortable sharing aspects of their lives with parents; adolescent disclosure has been found to be more protective against delinquency than parental control (Kerr et al., 2010; Stattin & Kerr, 2000). Our findings support Stattin and Kerr's (2000) argument that surveillance is unlikely to be the best approach to reducing youth risk behaviors; rather, the focus needs to be on identifying factors that increase youth's disclosure.

While our review of the literature suggest that this combination of parent characteristics is important for prevention of cyberbullying involvement, more work is needed in this area to validate these early findings. Specifically, the field would benefit from the careful conceptualization and measurement of parenting. For example, the vast majority of studies examining the influence of families on cyberbullying have relied on youth self-report of parents' monitoring behaviors. We identified only one study that examined the influence of youth disclosure on cyberbullying, and this study was cross sectional (Law et al.,

2010). Clearly, additional work is needed to identify the role of how parental knowledge is obtained (youth disclosure versus parent behaviors) on bullying.

Additionally, cyberbullying is often conceptualized as an extension of traditional bullying, yet there has been significantly less research on the role of families in preventing traditional bullying compared to the role of schools and peer contexts (Bradshaw, 2014). In an exception, Dehue et al. (2012) examined parenting correlates of both cyberbullying and tradiational bullying; the authors found significant similarities in the influence of parental responsiveness and demandingness on both forms of bullying. There is rich opportunity for studies to concurrently examine the role of families and parents in preventing and responding to traditional and cyberbullying to determine whether different parental strategies are appropriate for responding to these two forms of bullying.

Moreover, research has shown that adolescents and their parents do not always agree in their views, particularly in regard to the family. In general, adolescents tend to view the family more negatively than do their parents (Fung & Lau, 2010; Ohannessian & Reyes, 2014; Shek, 2007). In comparison to their parents, adolescents report more communication problems (Laird & De Los Reyes, 2013; Yu et al., 2006) and lower levels of family satisfaction and family cohesion (Ohannessian, Lerner, Lerner, & von Eye, 2000, 1995). Therefore, it is critical that reports are provided by both adolescents and their parents. It is important to realize that adolescents and their parents may vary in the domains of family functioning in relation to what they know and are able to observe (e.g., parents and perceived levels of knowledge about adolescents' whereabouts and activities vs. adolescents and perceived levels of disclosure about their whereabouts and activities) (Kraemer et al., 2003). The majority of studies reviewed in this paper relied on adolescent reports of family characteristics in relation to cyberbullying, yet as adolescents and their parents may provide unique information, more work is needed relying on both parent and adolescent reports.

Provisional evidence suggests that the influence of family functioning on cyberbullying varies depending on youth characteristics (i.e., ethnic background and sex). Findings from Shapka and Law (2013) suggest, for example, that parental control strategies, while not effective for youth of European background, may be effective for youth of Asian backgrounds. These authors note evidence that East Asian parents may view child-rearing as training, with a focus on self-discipline and hard work (Chao, 2000) – strategies that from a Western perspective may be viewed as lacking warmth (Xu et al., 2005). However, we identified only three studies that examined ethnic or cross-cultural differences in families and cyberbullying; much more work is needed for examining how the influence of parenting on cyberbullying may vary by ethnicity. Similarly, we identified only four studies that specifically examined the relation between family, cyberbullying, and the sex of the child; much more work is needed to unpack these relations.

Researchers' attention examining the influence of parents on cyberbullying has focused mostly on youth of Asian and Causcasian backgrounds; we identified no studies that examined the role of parenting on risk for cyberbullying among ethnic minority youth living in low-income urban areas. We argue that understanding the role of parents in preventing cyberbullying in this population is needed for three specific reasons. First, parental strategies required for healthy youth outcomes are likely to differ for parents operating in low-income, highly violent neighborhoods. Qualitative work has documented that effective parents in urban neighborhoods exert especially high levels control of their children's socializing choices and use of time (Jarrett, 1999). A number of studies have found that high parental monitoring in these high risk environments can protect youth from engaging in a range of risky activities, including violent behavior, substance use, and poor school performance (Cranford, Zucker, Jester, Puttler, & Fitzgerald, 2010; Hoeve et al., 2009; Jeynes, 2003). Better understanding the parental strategies that can protect youth from online interpersonal violence specifically among families living in low-

income urban areas is an important area for future research.

Second, the use of technology and how youth communicate on social media may differ by income and ethnicity. Recent national surveys conducted by the Pew Research Center indicate that those individuals who are most reliant on Internet-enabled phone or other devices by dint of having no other reliable access to the Internet are less financially stable (e.g., to have a bank account and less likely to be covered by health insurance) (Smith, 2015). In addition, evidence suggests that technology use of both adults and adolescents varies by ethnicity. For example, African American adolescents in particular are more likely to own a smartphone and more likely to use social media – especially Twitter – at higher rates than their peers of other ethnic backgrounds (Lenhart, 2015). For adults, ownership rates of smartphones are higher for African American adults (47%) and Latino adults (49%) than white adults (42%) (Rainie, 2012). These different patterns of use have important implications for intervention; for example, the location of online interpersonal violence likely differs if adolescents regularly access the Internet on a desk top – which likely is located at home – versus a smartphone, which can be accessed anywhere.

An additional promising direction for future research in the area of parenting and cyberbullying is better understanding the role of empathy and risk for cyberbulling involvement. Studies suggest that cyberbullies less empathic compared to nonbullies (Steffgen, König, Pfetsch, & Melzer, 2011), with cyberbullies reporting lower affective and cognitive empathy (Ang & Goh, 2010). Given this evidence, the development of empathy skills may be an important target for parents to help prevent their youth's involvement in cyberbullying. This is a promising direction for future studies.

Finally, it is important to note that cyberbullying is not the only form of online interpersonal violence in which youth engage. Recent qualitative work of gang involved ethnic minority adolescents who live in violent, urban neighborhoods indicates that these youth often use social media to grieve, express trauma and make and respond to threats (sometimes called cyberbanging) that can heighten the likelihood of lethal violence (Patton, Eschmann, & Butler, 2013). We identified no studies that examined the influence families and parents might have on cyberbanging as a specific form of online interpersonal violence. Given evidence that parenting strategies required in these environments differ, as well as the use of technology and form of online interpersonal violence, more work is needed to understand the influence of parenting on online interpersonal violence among families living in low-income urban areas.

4.1. Implications for practice

The literature on parents' role in adolescent online victimization is in a provisional state; most of the studies are correlational, making conclusions on causality of these relationships difficult. There is a clear need to more work in this area, including intervention studies targeting families. Nevertheless, our review of the literature has important implications for prevention efforts with families. Increasing parents' awareness of the types technology available (i.e., the range of social networking platforms and monitoring software) and its use by adolescents is a first step to improve parents' knowledge of how often their adolescents seek social contact online, foster a better understanding of what motivates them to do so, and give parents a sense of what to look for when supervising online activity. For example, Cassidy et al. (2012) indicate a mismatch between parents' perceptions and their adolescents' reports of the motivations for seeking time spent online: while adolescents report being motivated to go online for social connectedness, parents believe information seeking is the driving purpose for their adolescents' online activity. This disparity between what adolescents are doing online and what their parents think they are doing suggests that the importance of open communication between adolescents and parents about such activities. Beale and Hall (2007) suggest that parents can learn the user languages common to online platforms and

develop a sense of what to look for when monitoring their adolescents' online behavior (e.g., text acronyms including PIR "parents in room", NBD "no big deal", BRB "be right back").

Parents can establish a clear set of expectations for online behavior (including acceptable/unacceptable websites, time limits, and how to treat others online) that articulates limits for Internet use by addressing safety/privacy, and acceptable online behavior (Beale & Hall, 2007; Strom & Strom, 2006). For example, everyone should know how to identify and report cyberbullying should they see it, parents should carefully discuss anonymity and privacy online, and adolescents should never to share personal information, such as their account password or home address, with anyone.

However, our review of the evidence makes clear that for parents, setting expectations for online behavior without accompanying warmth and support is unlikely to be effective. There is a critical need for parents to provide emotional warmth and responsiveness that might support adolescent's disclosure of online activity (LaFleur, Zhao, Zeringue, & Laird, 2016). Youth rarely inform their parents about cyberbullying, in part out of fear for losing Internet privileges (Tokunaga, 2010). Without the perception of warmth and support, parents' strict monitoring may have limited effectiveness, as adolescents may perceive it as intrusive, over-controlling, and illegitimate. These qualities are associated with less disclosure and may foster rather than inhibit the very risk-taking behaviors parents' hope prevent. Rather, parents that seek their youth's perspective as to how to improve the situations are likely to be more effective (Moreno, 2014). Intervention programs that teach parents how to openly discuss cyberbullying with their youth therefore hold particular promise (Aboujaoude, Savage, Starcevic, & Salame, 2015).

Although much more work is needed to examine the role of gender in parenting and cyberbullying, existing evidence suggests that prevention efforts should consider the gender of both the adolescent and the parent as well. Theory and research suggest that mothers and fathers may differentially influence their children. For instance, according to socialization models (Holmbeck, Paikoff, & Brooks-Gunn, 1995) and research (Smetana et al., 2006; Williams & Kelly, 2005), adolescents spend more time in direct interaction with their mother than with their father. Of note, adolescents also have been found to talk with their mother more than with their father about private issues (Larson & Richards, 1994). In addition, mothers have been found to influence adolescent risk behaviors more than fathers (Guilamo-Ramos, Jaccard, Dittus, & Bouris, 2006). Nonetheless, fathers also are important and their parenting and behaviors influence adolescent adjustment, especially boys' adjustment (e.g., Crawford, Cohen, Midlarsky, & Brook, 2001; Ohannessian, 2012).

5. Conclusion

In summary, this article has reviewed pertinent literature that has implicated parents' influence on adolescent cyberbullying. The rapid development of and easy access to various technological platforms (e.g. Facebook, Twitter, Snapchat) has shifted how adolescents interact with one another and what they are willing to communicate behind the perceived safety of their computer screens. Expedient and at times anonymous communication layered with culture, context and nuance complicate how we engage adolescents in technological environments. Our review of a mostly cross sectional literature found that parental monitoring that emerges out of a warm and supportive relationship appears to be most closely related to lower cyberbullying involvement both as perpetrators and victims. Parental efforts to unilaterally restrict the Internet appear to be less effective than collaborative efforts to monitor the Internet, although evidence suggests these relations vary by sex and ethnicity. Prevention and intervention strategies focused on reducing cyberbullying must be multi-systemic and consider parent-adolescent dynamics and their relationship to community, school and society (Ang, 2015). Finally, determining which parenting strategies

are effective in reducing cyberbullying is key to developing sound, culturally appropriate prevention efforts.

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