Cyberbullying and parental mediation in the context of social media

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**CYBERBULLYING AND PARENTAL MEDIATION IN THE
CONTEXT OF SOCIAL MEDIA**

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2017

**Cyberbullying and Parental Mediation
in the Context of Social Media**

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ABSTRACT

With the increasing adoption and penetration of information and communication technologies (ICT), cyberbullying has become a critical social issue, which severely threatens the physical and psychological health of children and adolescents. Despite the rapid increase in the saliency of cyberbullying in the last decade, there still remains numerous research gaps. In order to identify these research gaps, this dissertation first conducted a meta-analytic study (Study 1) to systematically examine the factors underlying cyberbullying in the existing literature. Next, in response to the research gaps identified, Study 2 was carried out to explore how parents manage their children's social media use as well as to develop and validate a scale of parental mediation of social media. Based on this scale, Study 3 was designed to investigate the influences of parental mediation strategies, personality traits, and the third-person perception on cyberbullying on social media.

Specifically, Study 1 systematically examined the predictors of cyberbullying from the social cognitive and media effects approach. This study identified and examined 16 predictors of cyberbullying perpetration and victimization. The magnitude of the effects of these predictors were meta-analyzed using 81 empirical studies, which represented a total sample of 99,741 participants and yielded 259 independent correlations. The results revealed that risky ICT use, moral disengagement, depression, social norms, and traditional bullying perpetration were the main predictors of cyberbullying perpetration, while risky ICT use and traditional bullying victimization were the major contributors of cyberbullying victimization. According to the moderator analyses, country of the sample, sampling method, age, and media platform were significant moderators of the relationships between some specific predictors and cyberbullying perpetration and victimization. The findings suggested that future research should examine cyberbullying on social media among people from different age groups (e.g., children) and different countries (e.g., Asia). In addition, according the results, two personality traits reflecting positive views of the self – self-esteem and narcissism – are

important to cyberbullying. However, there are very limited studies to date that examined and compared the influences of narcissism and self-esteem on cyberbullying.

Furthermore, this research clarified that although there were few studies highlighting the role of parental mediation in cyberbullying, these studies did not differentiate between the influences of different parental mediation strategies on cyberbullying. To fill in these research gaps, studies should explore how parents approach their children's social media use, as well as how these mediation strategies and positive self-views affect cyberbullying on social media amongst children and adolescents.

Building on the recommendations from Study1, Study 2 addressed the conceptualization and operationalization of parental mediation of social media. First, this study conducted focus groups with both children and parents in Singapore, which identified four conceptually distinct parental mediation strategies of social media – active mediation, restrictive mediation, authoritarian surveillance, and monitoring, and developed an initial scale for them. In order to refine and test the scale, this study conducted a survey with a representative sample of 1,424 child participants and 1,206 parent participants in Singapore. The results were analyzed using a confirmation factor analysis. Besides, the scale was confirmed and validated upon assessments of the reliability, convergence validity, and discriminant validity.

Study 3 examined the associations of four different parental mediation strategies (validated in Study2) and personality traits reflecting positive self-views with cyberbullying perpetration and victimization on social media between primary and secondary school students. Potential interactive mechanisms affecting the effectiveness of parental mediation were further examined. They include the third-person perception, parent-child agreement in reporting parental mediation, and the age of the children. The results revealed that four different parental mediation strategies had varied effectiveness on preventing cyberbullying perpetration and victimization. Among these, active mediation was the most effective strategy in reducing cyberbullying perpetration, whereas restrictive mediation was more effective than others in protecting children from

cyberbullying victimization. However, children under authoritarian surveillance parental mediation strategy were more likely to resist their parents' demanding control and engage in both cyberbullying perpetration and victimization. Furthermore, the moderation results revealed that the effectiveness of some parental mediation strategies of social media was contingent upon the third-person perception and parent-child agreement in reporting parental mediation. Moreover, the parental mediation effectiveness varied between primary and secondary school students.

Taken together, this dissertation provides a systematic and comprehensive view on cyberbullying. In addition, it also elucidates some effective parental mediation strategies to guard against cyberbullying as well as identifies the key factors affecting the effectiveness of parental mediation. Lastly, the findings obtained from the research studies provide both theoretical and practical contributions to the field of cyberbullying and parental mediation.

CHAPTER ONE INTRODUCTION

1.1 Cyberbullying Background

1.1.1 Definition of cyberbullying

The rise of information and communication technologies (ICT) has provided individuals with great opportunities to access a large amount of information and to communicate with others. In particular, with increasing popularity of social media, children and adolescents spend most of their time on social media to interact with others and to expand their social networks, which have brought about many benefits to their social and emotional development (Chen & Yang, 2015; Kowalski, Limber, & Agatston, 2008). However, these communication technologies have also exposed children and adolescents to a large number of cyber risks, such as cyberbullying, which threaten their psychological and physical health (Kowalski et al., 2008).

Bullying is defined as an aggressive, repeated act or behavior intended to hurt others (Olweus, 1999; Whitney & Smith, 1993). With the proliferation of ICT, bullying has been extended from face-to-face contexts to computer-mediated communication (CMC) contexts (Li, 2006; Mitchell, Wolak, & Finkelhor, 2007). This newer form of bullying has been labeled as cyberbullying (Belsey, 2004), referring to an aggressive, intentional act carried out by a group or individual, using electronic forms of contact, against a victim who cannot easily defend him or herself (Smith, et al, 2008). Cyberbullying is an umbrella term which can manifest in six main forms: flaming (i.e., angry and offensive online exchanges), harassment (i.e., sending of malicious and offensive messages to the victim), denigration (i.e., spreading of rumors and gossips about a person online to damage his/her reputation), impersonation (i.e., pretending to be someone else so as to damage that person's reputation or get that person into trouble), outing (i.e., sharing secrets or humiliating information of another person on the Internet), and cyberstalking (i.e., repeatedly harassing someone such that the person feels threatened or afraid) (Willard, 2007). Besides, social media has been

identified as the most important platform for cyberbullying (Smith et al., 2008; Whittaker & Kowalski, 2015). Social media refers to “a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user generated content” (Kaplan & Haenlein, 2010, p 60). In general, social media may be classified into six different types: blogs, social networking sites, virtual game worlds, collaborative projects, content communities, and social mobile apps (Kaplan & Haenlein, 2010).

As compared to traditional physical aggression, cyberbullying is a newer form of bullying. It is essentially the same as relational and indirect aggression of traditional bullying (Johnson, 2009; Ortega et al., 2012), which inflicts direct or indirect harm on peers through verbal attacks and damaging peer relationships in the context of CMC (Berger, 2007). However, cyberbullying has several unique features that distinguish it from traditional bullying. First, unlike traditional bullying, anonymity is a facet of cyberbullying. For example, individuals can use a fake identity to send messages to harass others online. Kowalski and Limber (2007) examined cyberbullying among 3,767 middle school students in the United States (U.S.) and found that around half of the victims did not know the cyberbullies' identity. A second unique feature lies in the infinite audience in cyberspace. The CMC context provides cyberbullies with a much larger audience as compared with traditional bullies, which can quickly amplify the humiliation to the victims. A third distinguishing characteristic is the invisibility of victims' reaction. Cyberbullying perpetrators cannot witness the targets' immediate feedback. According to the online disinhibition effect (Suler, 2004), this might attenuate perpetrators' experience of empathy and encourage them to react aggressively to others (Akbulut, Sahin, & Eristi, 2010). Finally, there is an absence of time and space constraints in cyberbullying. Unlike traditional bullying that often occurs in the schoolyard, the perpetrator of cyberbullying can reach the victim anytime and anywhere. In other words, it is difficult for the victim to physically get away from the virtual venue of cyberbullying. The lack of physical boundaries also increases the

elusiveness of a responsible adult (e.g. teachers), which may increase the burden on parents to protect their children from cyberbullying.

1.1.2 Prevalence Rate of Cyberbullying

Due to an increasing number of children and adolescents using social media in recent years, the incidence of cyberbullying has increased rapidly worldwide (Görzig & Frumkin, 2013). Although the prevalence of cyberbullying as indicated in different studies tends to differ due to participants from different age groups, sampling methods, and diverse cultural contexts (Bauman, 2013; Kowalski, Giumetti, Schroeder, & Reese, 2012; Perren, Dooley, Shaw, & Cross, 2010), cyberbullying has become one of the most common online risks for children and adolescents over the world (Heirman & Walrave, 2012).

Specifically, cyberbullying has become a growing social problem in Europe. In the United Kingdom (U.K.), the National Children's Home (2005) found that 20% of the children in primary schools have been cyberbullied previously. Walrave and Heirman (2011) examined cyberbullying among 1,318 secondary school students in Belgium and found that more than one-third of the participants reported having been a target of cyberbullying, while roughly one-fifth of the participants admitted to cyberbullying others. A study conducted by Gámez-Guadix, Orue, Smith, and Calvete (2013) focusing on cyberbullying among 845 adolescents in Spain found that nearly 25% of the participants reported having been cyberbullied. Floros, Siomos, Fisoun, Dafouli, and Geroukalis (2013) examined cyberbullying among 2,017 pupils in Greece and found an alarming rise in reported experience of cyberbullying from 10.5% in 2008 to 34.1% in 2010.

Similarly, cyberbullying has also become a critical issue in recent years in North America. According to statistics from the National Crime Prevention Council, 40% of the teenagers in the United States (U.S.) reported having been cyberbullied (Bhat, 2008). Patchin and Hinduja (2010) examined cyberbullying among 1,963 pupils

from 30 middle schools in the U.S. and found that nearly 30% of the participants reported having been victims of cyberbullying. In Canada, Li (2006) found that about 25% of 256 junior high school students reported having been cyberbullied. Mishna et al. (2010) explored cyberbullying among 2,186 high school students and found that around half of the participants indicated having been cyberbullied, while 33.7% of participants admitting to previous cyberbullying behavior.

This phenomenon is not confined to Western countries. With the widespread use of ICT, cyberbullying is spreading at an alarming rate in Asia as well. In a study on cyberbullying among 25 countries worldwide, China, Singapore, and India were ranked as the top three nations with the highest level of cyberbullying (Microsoft, 2012). In South Korea, Tippet and Kwak (2012) examined cyberbullying among 416 secondary school students and found that approximately 10% and 6.3% of the respondents reported having recently been bullied through mobile phones and the Internet respectively, whereas 43% of the participants claimed having experienced victimization through online games. In Japan, Aoyama, Utsumi, and Hasegawa (2012) found that 33% of 551 junior high school students claimed previous involvement in cyberbullying. In addition, Zhou et al. (2013) explored cyberbullying among 1,438 high school students in China and found that more than half of the participants reported having been cyberbullied, while 34.8% of the participants admitted having cyberbullied others.

Singapore is a highly technophilic country where the residential wired broadband household penetration rate has reached 102.6% in March 2016 (Infocomm Development Authority of Singapore, 2016). Besides, 96% of Internet users in Singapore have used social media (We Are Social Singapore, 2016). Moreover, 39% of children and 78% of adolescents have previously used social media (Infocomm Development Authority of Singapore, 2016). According to Today's news report by Aziz (2014), social media users in Singapore spend an average of 2.2 hours per day on

social media. This is higher than the world average of 2.0 hours, thereby highlighting Singapore as a highly technophilic society (Kwan & Skoric, 2013).

Not surprisingly, cyberbullying has become a common social issue in technophilic Singapore. According to Microsoft's (2012) research, Singapore had the second highest prevalence rate of cyberbullying and was only ranked lower than China among the twenty-five countries surveyed worldwide. Indeed, many academic publications have indicated a high prevalence of cyberbullying in Singapore. Ang and Goh (2010) examined cyberbullying among 396 adolescents aged 12-18, and found that 38.7% of the participants reported having cyberbullied others. Furthermore, Lwin, Li, and Ang (2012) examined online harassment among 537 teenagers between the ages of 12 and 19 years and found that 51% of the respondents claimed having been cybervictims. Focusing on Facebook bullying among secondary school students in Singapore, Kwan and Skoric (2013) found that 59.4 % of the Facebook-using students reported having been cyberbullied on Facebook.

1.1.3 Consequences of Cyberbullying

The large number and the level of severity of cyberbullying incidents have threatened the physical and psychological health of children and adolescents. Nearly half of the adolescents in a survey believed that the negative consequences of cyberbullying were equal to or more severe than traditional bullying (Kapatzia & Syngollitou, 2007). Indeed, as compared with traditional bullying, victims of cyberbullying often experience greater negative long-term effects through verbal and relational aggression (Reid, Monsen, & Rivers, 2004).

First, cyberbullying could lead to severe psychosomatic symptoms such as emotional distress (Bauman & Newman, 2013), isolation, loneliness, anxiety, and depression (Kowalski et al., 2008; Patchin & Hinduja, 2006), which subsequently adversely affects the victims' social relationships with friends and family members. This might trigger various antisocial behaviors such as absenteeism (Beran & Li,

2005), delinquency (Hay, Meldrum, & Mann, 2010), and substance use (Low & Esplelage, 2013). Furthermore, several scholars have found a higher risk of suicidal behaviors among people engaged in cyberbullying (e.g., Bauman, Toomey, & Walker, 2013; Hinduja & Patchin, 2010; Raskauskas & Stoltz, 2007; Thomas, 2006). In sum, cyberbullying has severely adverse effects on victims. As such, it is imperative that greater effort be exerted to systematically investigate the factors underlying cyberbullying, as well as to explore effective cyberbullying interventional and preventive strategies.

1.2 Research Objectives

In order to understand and curb cyberbullying, many educators and researchers have attempted to investigate this issue. Early descriptive studies were conducted to explore the prevalence of cyberbullying (e.g., Dehue, Bolman, & Vollink, 2008; Privitera & Campbell, 2009; Slonje & Smith, 2008), forms of cyberbullying (e.g., Didden, Sigafos, & Korzilius 2009; Patchin & Hinduja, 2006), and electronic channels of cyberbullying (e.g., Smith et al., 2008; Li, 2005). In contrast, studies conducted in more recent years focused on the examination of the predictors of cyberbullying from different perspectives, including media exposure (e.g., Akbulut et al., 2010; Erdur-Baker, 2010), personal factors (e.g., Ang & Goh, 2010; Patchin & Hinduja, 2010), and environmental factors (e.g., Festl & Quandt, 2013; Shapka & Law, 2013). These extant cyberbullying studies focused on either cyberbullies who directly cyberbully others, or cybervictims who are cyberbullied. The terms *cyberbullying perpetration* and *cyberbullying victimization* have been widely used to describe the perpetuation and the receipt of cyberbullying in previous studies respectively (e.g., Heirman & Walrave, 2008; Hinduja & Patchin, 2010; Patchin & Hinduja, 2010; Walrave & Heirman, 2011).

Although the saliency of the issue of cyberbullying has increased rapidly in the last decade, cyberbullying research is still in its infancy stage, with numerous research

gaps to be filled. This dissertation aims to identify and address these research gaps. Specifically, the first objective of this dissertation is to systematically examine the factors underlying cyberbullying perpetration and victimization, as well as the magnitude of the effects of these factors by meta-analyzing existing empirical studies on cyberbullying (Study 1). The findings of this study suggest that future research should examine cyberbullying on social media among people from different age groups (i.e., children) and different countries (e.g., Asia). This study also highlights the need to examine and differentiate between the influence of different parental mediation strategies and personality traits reflecting positive self-views on cyberbullying on social media. In order to address these research gaps, it is necessary to investigate how self-esteem, narcissism, and various parental mediation strategies of social media affect cyberbullying on social media between primary and secondary school students in Asia. However, extant parental mediation studies have only examined the types of parental mediation used in television viewing and Internet usage. Parental mediation strategies used in addressing social media usage may be different from the mediation strategies employed by parents to manage children's television viewing and Internet use (Chen, 2016). As such, this research aims to identify conceptually distinct parental mediation strategies of social media and to develop a successively validated and reliable scale for them (Study 2). Lastly, the third objective of this research is to examine and compare the influences of different parental mediation strategies and personality traits on cyberbullying on social media between upper primary school students (9-12 years) and secondary school students (13-17 years) (Study 3).

In line with the aforementioned three main research objectives, Study 1 serves as a baseline study which sets up Study 2 and Study 3. More specifically, the meta-analytic study of cyberbullying (Study 1) integrates the social cognitive theory and media effects theory as a theoretical framework to synthesize the entire range of existing empirical literature of cyberbullying. It provides not only an overview of the current knowledge on predictors of cyberbullying, but also new insights about the

magnitude of the effects of these predictors. Study 1 also identifies four moderators that significantly account for differences found across different studies. In addition, the five main research gaps identified in Study 1 serve as guidelines for the subsequent studies. These research gaps are as follows: Firstly, while cyberbullying is most rampant on social media, there is very little research examining cyberbullying on social media. Secondly, apart from adolescents, children are also part of the main group of cyberbullying offenders and victims. However, there currently exists a very limited number of studies examining cyberbullying in childhood. Thirdly, although research by Microsoft (2012) has indicated higher cyberbullying prevalence rates in Asian countries as compared to Western countries, most existing cyberbullying studies have focused on North America and Europe instead, with very little attention cast onto Asia. Next, while personality traits, such as self-esteem and narcissism, which reflect positive self-views have been found to be important to cyberbullying, there are only a few studies which examine and compare between the influences of narcissism and self-esteem on cyberbullying. Lastly, according to the parental mediation theory, parental mediation involves the usage of many different strategies to protect children from media-related risks. However, existing cyberbullying studies have only considered parental mediation as a single factor, and ignore the different effectiveness of each parental mediation strategy in cyberbullying prevention.

In order to fill the above research gaps, subsequent studies should examine the factors influencing cyberbullying on social media among children and adolescents in Asia. Additionally, there is also a need to highlight the associations of parental mediation strategies and personality traits reflecting positive self-views with cyberbullying perpetration and victimization on social media.

While there has been clarification regarding the directions of subsequent studies, existing studies have only examined the types of parental mediation used in managing television and Internet use. In the current digital age, parents may employ many different ways to approach their children's social media use (Chen, 2016). As

such, prior to examining the influences of different parental mediation strategies on cyberbullying on social media, I conducted Study 2 to identify conceptually distinct parental mediation strategies of social media, as well as to develop a successively validated and reliable scale for them based on the parental mediation theory. Finally, according to the conceptualization and operationalization of parental mediation strategies of social media validated in Study 2, I conducted Study 3 to explore the influences of parental mediation strategies of social media and personality traits reflecting positive self-views on cyberbullying on social media. Additionally, many researchers have proposed the possibility of parental mediation outcomes being contingent on the children's acceptance and understanding of parental mediation messages as well as their age (Buijzen, Rozendaal, Moorman, & Tanis, 2008; Fujioka & Austin, 2003; Grusec & Goodnow, 1994; Lwin, Stanaland, & Miyazaki, 2008). To address this, this study further examined the potential interactive mechanisms affecting the influence of parental mediation strategies on cyberbullying perpetration and victimization on social media. Such mechanisms included the third-person perception, parent-child agreement in reporting parental mediation and the children's age group.

Figure 1.1 Dissertation flowchart

1.3 Overview of Chapters

This dissertation is organized into five chapters, with references and supporting documents. Chapter one introduces the background for this dissertation and the research objectives. In Chapter two, the meta-analytic study of cyberbullying (Study 1) is presented. This study identifies the factors underlying cyberbullying perpetration and victimization and examines the extent of the association between these factors and cyberbullying. Furthermore, four moderators: country, sampling method, age, and media platform are identified to explain the varied effects of these predictors across different studies. Based on these findings, the research gaps in the domain of cyberbullying are clarified.

Following that, Study 2, which addresses the conceptualization and operationalization of parental mediation of social media, is presented in Chapter three.

In this study, focus groups are first conducted to explore and identify four conceptually distinct parental mediation strategies of social media. An initial scale is subsequently created to address these mediation strategies. Next, to refine and validate the scale, a survey is conducted among representative child and parent samples in Singapore.

Next, Chapter four discusses about Study 3, which investigates the influences of parental mediation strategies and personality traits on cyberbullying perpetration and victimization on social media. Specifically, hypotheses and research questions are proposed to investigate the main effects of self-esteem, narcissism, the third-person perception and the four distinct parental mediation strategies on cyberbullying perpetration and victimization on social media. The potential interactive mechanisms by which the third-person perception, parent-child agreement in reporting parental mediation and children's age group affect the effectiveness of parental mediation are also examined. In Study 3, a survey is conducted with a Singaporean nationally representative parent-child matched sample. The ordinary least squares (OLS) hierarchical regression analysis was used to address the proposed research questions and hypotheses. Following that, the results are reported and discussed.

Finally, Chapter five concludes the entire dissertation. It reviews all three studies, summarizes key findings, and presents both theoretical and practical contributions. The limitations of this dissertation and recommendations for future research are also highlighted in this chapter.

CHAPTER TWO

STUDY 1: A META-ANALYSIS OF FACTORS PREDICTING CYBERBULLYING PERPETRATION AND VICTIMIZATION: FROM THE SOCIAL COGNITIVE AND MEDIA EFFECTS APPROACH¹

As discussed in Chapter One, since the introduction of the term *cyberbullying* in 2004 (Belsey, 2004), many studies have attempted to investigate this issue from varying aspects, such as media exposure, personal factors, and environmental factors. Kowalski, Giumetti, Schroeder, and Lattanner (2014) conducted a meta-analysis to examine predictors and outcomes of cyberbullying among adolescents based on empirical studies from 2002 to early 2013. However, their study only focused on adolescents, and neglected to account for other vulnerable groups such as children and emerging adults. Additionally, their study only analyzed studies in Western countries, and did not include studies from Asia. It is important to include Asian samples into the meta-analysis, as recent reports have shown that the highest incidences of cyberbullying are occurring in Asian countries such as China, India, and Singapore (Microsoft, 2012). Also, their study overlooked several important factors, such as social norms and popularity, both of which have been examined in many extant studies (e.g., Espelage, Rao, & Craven, 2013; Heirman & Walrave, 2008; Lazuras, Barkoukis, Ourda, & Tsorbatzoudis, 2013). These limitations, coupled with the introduction of many new empirical studies on cyberbullying over the last two years, served as our impetus to systematically examine cyberbullying with a different theoretical perspective.

In order to clarify the research gaps in the domain of cyberbullying and to offer directions for future cyberbullying research, this study applies the social cognitive and media effects approach to systematically meta-analyze the entire range of empirical

¹ This study has been published in *New Media & Society*.

studies across all age groups and countries from 2004 to 2015. Specifically, this study seeks to analyze 16 predictors of cyberbullying and to examine the magnitude of the effects of these predictors across 81 empirical studies. Besides, this study selects and analyzes four potential moderators: country, sampling method, age, and media platform to explain the variance in the magnitude of the effects of these predictors across different studies.

2.1 Theoretical Framework

The social cognitive theory suggests human functioning to be an interaction of personal, behavioral, and environmental influences, and posits that both personal factors and environmental factors can affect human behavior (Bandura, 1986). The theory has been proliferated among the best practices to tackle bullying behaviors (Hymel, Rocke-Henderson, & Bonanno, 2005; Mouttapa et al., 2004; Thornton et al., 2000) by helping individuals understand the complexity of bullying behaviors and the social nature of involvement in bullying. Similar to traditional bullying, cyberbullying is heralded as social relationship issue (Swearer, Wang, Berry, & Myers, 2014). As such, social cognition has been considered as a comprehensive approach to integrate personal and social environmental factors to explain the cyberbullying phenomenon (Xiao & Wong, 2013). Specifically, the social cognitive theory asserts that personal factors include personality characteristics, past experiences, needs, desires, and goals, which contribute to motivating individuals' behaviors (Bandura, 1977, 1986). Besides, according to social cognitive theory, environmental factors, such as the values, attitudes, and feedback from significant others, could also shape individuals' behaviors (Bandura, 1977, 1986). For these reasons, the social cognitive theory was used to guide the examination cyberbullying in this meta-analytic study.

Although the social cognitive theory has emphasized the influences of personal and environmental factors on human behaviors, early studies based on the social cognitive perspective usually ignored the effect of media on behaviors (Bandura, 1986;

2004). In the communication domain, thousands of empirical studies have investigated and validated the effects of media on children and adults (Potter 2012, Potter & Riddle 2007). In general, the media effects theory has suggested that media use could result in the deliberative and non-deliberative short- and long-term within-person changes in cognitions, emotions, attitudes, and behaviors. Moreover, with the advent of the Internet, ICT has become an essential part of people, especially among children and adolescents' lives, and could hence shape their attitudes and behaviors (Guan & Subrahmanyam, 2009). Furthermore, an individual's ICT usage can affect their aggressive behaviors and involvement in cyberbullying (Festl, Scharkow, & Quandt, 2013; Mark & Ratliffe, 2011). Thus, media usage could be critical in explaining the cyberbullying phenomenon. Based on these considerations, this study integrates the social cognitive theory and media effects theory as a theoretical framework to identify the following three main categories of factors to explain cyberbullying: media exposure, personal factors, and environmental factors.

2.1.1 Media Exposure

Based on the media effects theory, media has an influence on individuals' behaviors (Valkenburg & Peter, 2013). In the context of cyberbullying, many studies have found that people who spend more time with ICT are at a higher risk of being involved in cyberbullying (e.g., Akbulut, Sahin, & Erist, 2010; Bauman, 2009; Zhou et al., 2013). This is in line with the online disinhibition effect (Suler, 2004). The absence of rich emotive cues and immediate feedback in online interactions create a disinhibition effect, which diminishes self-censorship. In the online environment, individuals generally feel less restrained and are more likely to express their thoughts more freely (Ho & McLeod, 2008; Suler, 2004). This encourages aggressive behavior toward others (Espelage et al., 2013).

Additionally, risky ICT use has been considered as a critical factor of cyberbullying. Many studies have indicated that participating in risky Internet

activities, such as sharing personal information or photos online (Kwan & Skoric, 2013; Mesch, 2009) and adding strangers as online friends (Görzig & Ólafsson, 2013; Kwan & Skoric, 2013), contributes to a higher likelihood of becoming victims of cyberbullying. Besides, many studies have revealed that people who participate in risky Internet activities are more likely to cyberbully others (e.g., Bauman, 2009; Chang et al., 2013). Therefore, frequency of ICT use and risky ICT use are positively associated with both cyberbullying perpetration and victimization.

2.1.2 Personal Factors

According to the social cognitive theory (Bandura, 1986), personal and environmental factors are the main determinants of individuals' behaviors. Personal factors include personality traits, belief, skill level, available effort, and experiences (Gifford & Nilsson, 2014; Gist & Mitchell, 1992). In the context of cyberbullying, previous empirical studies have identified 10 and 8 personal factors to predict cyberbullying perpetration and victimization respectively.

Specifically, extant empirical studies on cyberbullying have documented that moral disengagement (e.g., Bussey, Fitzpatrick, & Raman, 2015; Perren & Sticca, 2011), narcissism (e.g., Braithwaite, Ahmed, & Braithwaite, 2009), depression (Kowalski et al., 2008), and self-efficacy (e.g., Bussey et al., 2015) are positively associated with cyberbullying perpetration. On the other hand, self-esteem (e.g., Pyżalski, 2012; Yang et al., 2006), emotional management (e.g., Kellerman, Margolin, Borofsky, Baucom, & Iturralde, 2013), popularity (e.g., Buelga, Iranzo, Cava, & Torralba, 2015), and school commitment (e.g., Hemphill, Tollit, Kotevski, & Heerde, 2014) are negatively associated with cyberbullying perpetration.

Additionally, research examining cyberbullying victimization has demonstrated that moral disengagement (e.g., Almeida, Correia, Marinho, & Garcia 2012) and depression (e.g., Didden et al., 2009; Low & Espelage, 2013) are positive predictors of cyberbullying victimization. Conversely, self-esteem (e.g., Brewer & Kerslake, 2015;

Yang et al., 2006), emotional management (e.g., Hemphill et al., 2014), and self-efficacy in defending (e.g., Chang et al., 2015a; Depaolis & Williford, 2015) are negatively associated with cyberbullying victimization.

In addition, TB perpetration and victimization have been considered as crucial personal factors, and are positively associated with both cyberbullying perpetration and victimization (e.g., Hemphill et al., 2012; Sticca, Ruggieri, Alsaker, & Perren, 2013; Ybarra & Mitchell, 2004). Therefore, this study explores the degree to which these personal factors are associated with cyberbullying perpetration and victimization.

2.1.3 Environmental Factors

According to the social cognitive theory, besides personal factors, environmental factors are another category of determinants of individuals' behaviors, which could promote or inhibit violent behaviors (Bandura, 1986). Environmental factors refer to the roles played by parents, peers, and other persons who are important to an individual (Bruning, 1999). The values, attitudes, and feedback provided by these referent groups could drive individuals' behaviors (Ho et al., 2014). In terms of cyberbullying, extant studies have revealed that general parental interaction (e.g., Cappadocia, Craig, & Pepler, 2013) and parental mediation of children's ICT use (e.g., Roberto, Eden, Savage, Ramos-Salazar, & Deiss, 2014; Shapka & Law, 2013) are negatively associated with both cyberbullying perpetration and victimization. Besides, some studies have found that social norms, including subjective, descriptive, and injunctive norms, are also positively related to cyberbullying perpetration (e.g., Bastiaenssens et al., 2015; Heirman & Walrave, 2008). Therefore, this study examines the extent to which these environmental factors are associated with cyberbullying perpetration and victimization.

2.2 Research Questions

According to the literature review in the preceding section, the following research questions are formulated:

RQ1. To what degree are the following 14 factors – (a) frequency of ICT use, (b) risky ICT use, (c) moral disengagement, (d) narcissism, (e) depression, (f) self-efficacy, (g) self-esteem, (h) emotional management, (i) school commitment, (j) TB perpetration, (k) TB victimization, (l) social norms, (m) parental interaction, and (n) parental mediation – associated with cyberbullying perpetration?

RQ2. To what degree are the following 11 factors – (a) frequency of ICT use, (b) risky ICT use, (c) self-esteem, (d) moral disengagement, (e) depression, (f) self-efficacy in defending, (g) emotional management, (h) TB perpetration, (i) TB victimization, (j) parental interaction, and (k) parental mediation – associated with cyberbullying victimization?

2.3 Method

2.3.1 Literature Search

To identify relevant studies, the first step was to locate studies using the following key words: cyberbullying, cyberbullying perpetration, cyberbullying victimization, cyber-victimization, cyberbully, cybervictim, online bullying, online victimization, Internet bullying, Internet victimization, online harassment, Internet harassment, online aggression, and Internet aggression. The following databases were searched: Communication & Mass Media Complete, PsycINFO, PubMed, Educational Resources Information Center (ERIC), MEDLINE, Web of Science Direct, and EBSCO. To be thorough, the reference lists of the collected publications for additional studies were also reviewed (Sohn, 1996).

Studies were included in this meta-analysis based on the following inclusion and exclusion criteria:

1. The article should focus on predictors of cyberbullying which is defined as an aggressive, intentional act carried out using electronic forms of contact (Smith et al., 2008). As a result, studies focusing on online harassment or aggression were also included in this meta-analysis.

2. The quantitative information for meta-analytical purposes that could be computed or converted into effect size estimates must be available in the selected studies. Essential data include sample sizes, test statistics, means, correlations, and odds ratios.

3. If one study used two or more data sets, it was considered as two or more studies.

The original search process identified 1,037 related studies. After going through the abstracts of all 1,037 articles, only 139 examined predictors of cyberbullying. Furthermore, 80 of the 139 studies provided the quantitative information for calculation of effect sizes, but one of these studies used two data sets. Therefore, after the filtering process, the final sample for this meta-analysis was 81 studies, which represented a total sample of 99,741 participants and yielded 259 independent correlations.

2.3.2 Coding Procedures

Prior to coding, two coders were trained based on the specific coding criteria. Following this, they were asked to practice coding. Any discrepancies were resolved, and the decision rules were established to avoid ambiguities. Following this, the two coders individually coded all 81 studies. Specific study characteristics, predictors, moderators, and statistical indexes in each study were coded. The inter-rater agreement (Cohen's κ) ranged from .80 to 1.00, with the average $\kappa = .83$.

2.3.3 Calculation of Effect Sizes

To compute effect sizes, the statistics of comparable formats as reported in each study were taken. The data formats mainly included correlations, odds ratios, and means with standard deviations. All the data were entered to the Comprehensive Meta-Analysis (CMA) software program and then converted into one uniform form of Pearson product-moment correlation (Pearson's r). According to Cohen's guidelines of effect size for social science (Cohen, 1988, 1992), small effect size is indicated by Pearson's r of .10–.23; medium effect size is indicated by Pearson's r of .24–.36; and large effect size is indicated by Pearson's r of .37 or higher. The total effect sizes of each predictor and dependent variables (cyberbullying perpetration or victimization) were averaged Pearson's r across studies, weighting each observed correlation according to the study's sample size and standard error (Hedges & Olkin, 1985).

With respect to the homogeneity test, the Q statistic was used in this meta-analysis. According to the guideline presented by Hedges & Vevea (2007), this study used the random effects model because most Q statistics were significant.

2.4 Results

2.4.1 Description of the studies

First, I provide a summary description of all the 81 studies included in this meta-analysis. Among the 81 studies, 9 (11.11%) were published from 2004 to 2009, while the remaining 72 (88.89%) studies were published between 2010 and 2015. This revealed that there was a noticeable increase in cyberbullying research since the term “cyberbullying” was coined by Belsey in 2004. Of the 81 studies, 67 (82.72%) examined the predictors of cyberbullying perpetration, while 56 (69.14%) explored the predictors of cyberbullying victimization. Most studies employed samples from North America and Europe: 34 (41.98%) studies used samples from North America (the United States and Canada); 31 (38.27%) studies were from Europe, such as Belgium, Greece, the Netherlands, and the United Kingdom; and the remaining 16 (19.75%)

studies were from the Asia-Pacific region, such as Australia, China, and Singapore. Most studies used samples of adolescents (85.19%). Only nine (11.11%) studies examined cyberbullying among adults and three (3.70%) studies focused on children. Finally, 47 (58.02%) studies used non-random samples, whereas 34 (41.98%) studies applied the random sampling method.

2.4.2 Weighted Correlations

Cyberbullying Perpetration. Weighted correlations between predictors and cyberbullying perpetration are presented in Table 2.1. For media exposure, the predictive power of risky ICT use ($r = .29, p < .05$) was stronger than frequency of ICT use ($r = .20, p < .05$) when predicting cyberbullying perpetration. According to Cohen's guidelines of effect size (Cohen, 1988, 1992), the association between frequency of ICT use and cyberbullying perpetration was small, while the association between risky ICT use and cyberbullying perpetration was medium. The weighted effect sizes of both predictors were significantly distinguished from zero because their 95% confidence intervals did not cross zero.

With regard to personal factors, the strongest positive predictor was TB perpetration ($r = .39, p < .05$), which had a large effect size. Moral disengagement ($r = .28, p < .05$), depression ($r = .25, p < .05$), narcissism ($r = .23, p < .05$), and self-efficacy ($r = .21, p < .05$) were also positively associated with cyberbullying perpetration, but their effect sizes were either medium or small, and hence weaker than that of TB perpetration. The smallest effect size was noted for TB victimization ($r = .19, p < .05$). On the other hand, self-esteem ($r = -.13, p < .05$), school commitment ($r = -.10, p < .05$), and emotional management ($r = -.09, p < .05$) had weak negative associations with cyberbullying perpetration. All the above effect sizes were significantly different from zero. However, the results showed that popularity was not a significant predictor because its 95% confidence intervals crossed zero.

In terms of environmental factors, social norms were positively associated with cyberbullying ($r = .27, p < .05$), with a medium level effect size. Besides, parental interaction ($r = -.17, p < .05$) and parental mediation ($r = -.07, p < .05$) were weak negative predictors. These effect sizes were significantly different from zero.

Cyberbullying Victimization. Weighted correlations between predictors and cyberbullying victimization are shown in Table 2.2. For media exposure, risky ICT use ($r = .26, p < .05$) had a larger effect size than frequency of ICT use ($r = .19, p < .05$) with respect to being cybervictims. Based on Cohen's guidelines (Cohen, 1988, 1992), the former's effect size was medium, but the latter's effect size was small. Both effect sizes were significantly different from zero.

Among personal factors, TB victimization ($r = .32, p < .05$) had moderate positive correlations with cyberbullying victimization. TB perpetration ($r = .21, p < .05$), depression ($r = .20, p < .05$), and moral disengagement ($r = .14, p < .05$) were also positive predictors, but had small effect sizes. Conversely, self-esteem ($r = -.22, p < .05$), emotional management ($r = -.20, p < .05$), and self-efficacy in defending ($r = -.03, p < .05$) had weak negative effects on cyberbullying victimization. All these effect sizes were significantly different from zero.

In terms of environmental factors, both parental interaction ($r = -.09, p < .05$) and parental mediation ($r = -.07, p < .05$) were negatively associated with cyberbullying victimization. Their effect sizes were small, but significantly different from zero.

Table 2.1 Meta-analysis of predictors of cyberbullying perpetration.

Correlates	<i>k</i>	<i>N</i>	Effect size	95% CI		<i>Q</i>
				Low	High	
Media exposure						
Frequency of ICT use	18	21,035	.20	.14	.25	303.98***
Risky ICT use	9	15,083	.29	.23	.36	139.50***
Personal factors						
Self-esteem	6	6489	-.13	-.19	-.07	2.38
Moral disengagement	10	5854	.28	.20	.36	86.97***
Narcissism	2	764	.23	.16	.29	0.33
Depression	7	6262	.25	.16	.35	75.24***
Self-efficacy	5	4233	.21	.07	.33	74.74***
Emotional management	4	2546	-.09	-.15	-.03	5.29
Popularity	3	1307	-.26	-.21	.63	112.73***
School commitment	3	8066	-.10	-.20	-.01	35.72***
TB perpetration	32	75,396	.39	.35	.43	1062.38***
TB victimization	22	66,586	.19	.14	.24	650.93***
Environmental factors						
Social norms	6	6167	.27	.17	.37	82.62***
Parental interaction	6	8202	-.17	-.29	-.04	161.95***
Parental mediation	6	7362	-.07	-.14	-.01	43.94***

Note. CI: confidence interval; ICT: information and communication technology; TB: traditional bullying; *k*: number of studies; *N*: total sample size for all studies combined; effect size: Pearson's *r*; 95% CI: lower and upper limits of 95% CI for effect size. *** $p < .001$.

Table 2.2 Meta-analysis of predictors of cyberbullying victimization.

Correlates	<i>k</i>	<i>N</i>	Effect size	95% CI		<i>Q</i>
				Low	High	
Media exposure						
Frequency of ICT use	23	50,523	.19	.14	.23	442.40***
Risky ICT use	11	14,837	.26	.19	.32	141.06***
Personal factors						
Self-esteem	5	2766	-.22	-.28	-.15	10.78
Moral disengagement	6	4592	.14	.06	.23	39.12***
Depression	9	33,443	.20	.13	.28	169.58***
Self-efficacy in defending	2	2975	-.03	-.06	-.01	0.90
Emotional management	4	4044	-.20	-.34	-.08	1.66
TB perpetration	22	67,637	.21	.18	.24	189.71***
TB victimization	24	71,474	.32	.30	.36	721.19***
Environmental factors						
Parental interaction	6	6907	-.09	-.12	-.06	7.17
Parental mediation	8	8331	-.07	-.13	-.01	43.93***

Note. CI: confidence interval; ICT: information and communication technology; TB: traditional bullying; *k*: number of studies; *N*: total sample size for all studies combined; effect size: Pearson's *r*; 95% CI: lower and upper limits of 95% CI for effect size. ****p* < .001.

2.4.3 Moderator Analyses

As a significant *Q* statistic indicates significant heterogeneity of effect sizes across different studies, this study has followed the recommendations of many scholars (e.g. Cook, Williams, & Guerra, 2010; Rosenthal, 1991) and conducted moderator analyses for the factors with heterogeneous effect sizes across studies. More specifically, the country of the sample, sampling method and age were selected as potential moderators of all factors with heterogeneous effect sizes across studies and cyberbullying. In addition, media platform was used as a potential moderator of media exposure factors and cyberbullying. The decision to select the abovementioned factors were based on findings from previous studies as well as recommendations from scholars. For instance, previous studies have indicated cross-cultural differences in cyberbullying, in which adolescents in Asia were more likely to be involved in cyberbullying than their counter-parts in the West (Microsoft, 2012; Perren et al., 2010). Besides this, several scholars have also suggested that the varying prevalence

rates of cyberbullying across previous studies may be attributed to the use of different sampling methods, as well as to age differences arising from the assessment of participants from different age groups (Bauman, 2013; Kowalski et al., 2012). Moreover, Brandtzæg, Staksrud, Hagen, and Wold (2009) found that different media platforms may elicit varying cyberbullying experiences among children. Based on such considerations, the abovementioned four factors were employed into this study as potential moderators.

Results from the moderator analyses have highlighted the following. Firstly, the country of the sample significantly moderated the association of parental interaction ($Q_B = 100.76, p < .001$) and cyberbullying perpetration (see Table 2.3). Secondly, the method of sampling significantly moderated the associations between the frequency of ICT use ($Q_B = 4.19, p < .05$) and parental interaction ($Q_B = 6.43, p < .05$) with cyberbullying perpetration. In addition, the method of sampling was also a significant moderator between the frequency of ICT use and cyberbullying victimization ($Q_B = 10.70, p < .01$) (see Table 2.4). Thirdly, age was found to be a significant moderator, and may hence be used to explain the differences between effect sizes of TB perpetration ($Q_B = 80.10, p < .001$) and TB victimization ($Q_B = 21.41, p < .001$) when assessed for cyberbullying perpetration. Moreover, age also significantly moderated the associations of the frequency of ICT use ($Q_B = 12.95, p < .01$) and TB victimization ($Q_B = 13.13, p < .01$) with cyberbullying victimization (see Table 2.5). Finally, the type of media platform significantly moderated the relationships between the frequency of ICT use and cyberbullying perpetration ($Q_B = 12.14, p < .01$) and cyberbullying victimization ($Q_B = 23.12, p < .001$) (see Table 2.6).

Table 2.3 Moderator analysis: country.

DV	Predictors	Categories	<i>k</i>	Effect size	<i>Q</i>
Cyberbullying perpetration	Frequency of ICT use	Internet	8	.17	12.14**
		Social media	8	.24	
		Electronic media	2	.10	
Cyberbullying victimization	Frequency of ICT use	Internet	10	.18	23.12***
		Social media	8	.27	
		Electronic media	5	.06	

Note. DV: Dependent variable; *k*: number of studies; effect size: Pearson's *r*.

*** $p < .001$.

Table 2.4 Moderator analysis: sampling.

DV	Predictors	Categories	<i>k</i>	Effect size	<i>Q</i>
Cyberbullying perpetration	Frequency of ICT use	Non-random	11	.25	4.19*
		Random	7	.13	
	Parental interaction	Non-random	1	.05	6.43*
		Random	5	.20	
Cyberbullying victimization	Frequency of ICT use	Non-random	10	.27	10.70**
		Random	13	.10	

Note. DV: Dependent variable; ICT: information and communication technology; *k*: number of studies; effect size: Pearson's *r*. * $p < .05$; ** $p < .01$.

Table 2.5 Moderator analysis: age.

DV	Predictors	Categories	<i>k</i>	Effect size	<i>Q</i>
Cyberbullying perpetration	TB perpetration	Adult	3	.50	80.10***
		Teen	27	.40	
		Child	2	.14	
	TB victimization	Adult	1	.33	21.41***
		Teen	18	.20	
		Child	3	.01	
Cyberbullying victimization	Frequency of ICT use	Adult	4	.05	12.95**
		Teen	18	.17	
		Child	1	.14	
	TB victimization	Adult	1	.48	13.13**
		Teen	20	.33	
		Child	3	.24	

Note. DV: Dependent variable; TB: traditional bullying; ICT: information and communication technology; *k*: number of studies; effect size: Pearson's *r*.

** $p < .01$; *** $p < .001$.

Table 2.6 Moderator analysis: media platform.

DV	Predictors	Categories	<i>k</i>	Effect size	<i>Q</i>
Cyberbullying perpetration	Parental interaction	Asia-Pacific	2	-.07	100.76***
		Europe	1	-.40	
		North America	3	-.28	

Note. DV: Dependent variable; ICT: information and communication technology; *k*: number of studies; effect size: Pearson's *r*. ***p* < .01; ****p* < .001.

2.5 Discussion

This meta-analysis not only identified the main predictors of cyberbullying perpetration and victimization, but also examined the magnitude of the effects of these predictors. Primarily, the results revealed that with the exception of popularity, all proposed factors based on the social cognitive and media effects approach significantly predicted either cyberbullying perpetration or victimization. This indicates that the integration of the social cognitive theory and media effects theory will provide a promising theoretical framework to explore the phenomenon of cyberbullying.

Next, when compared to other predictors, risky ICT use, moral disengagement, depression, TB perpetration, and social norms were more strongly related to cyberbullying perpetration. Based on Cohen's guidelines of effect size, their aggregated effect sizes were either of a large or medium level (Cohen, 1988, 1992). Such findings highlight that in order to curb children and adolescents' aggressive behavior online, educators should conduct workshops or seminars to guide students on how to use ICT safely. Moreover, educators should not only advocate moral engagement by developing children's abilities to employ both substantive knowledge and moral reasoning when evaluating the events (Colby & Ehrlich, 2003) but also aim to mitigate the onset of depression in children by understanding children's emotional situation, providing a relaxing environment, and encouraging their autonomy (Beyondblue, 2011). Educators and parents should pay more attention to offenders of TB and increase their awareness on the negative outcomes of cyberbullying. Due to the relatively strong effect of social norms on cyberbullying perpetration, the correction of

an individual's misperception about the prevalence of cyberbullying among their peers could prove to be important. In addition, the results revealed that only small associations were established between the frequency of ICT use, self-esteem, narcissism, self-efficacy, emotional management, school commitment, TB victimization, parental interaction, parental mediation, and cyberbullying perpetration. Moreover, popularity was not a significant predictor of cyberbullying perpetration. Despite this, it cannot be simply concluded that these factors are unimportant. One reason for the weak or null relationships might be due to the fact that only a small number of studies have focused on these predictors. Thus, the effect sizes were calculated based on limited studies. Another reason might be due to the nature of cross-sectional studies, which are unable to capture the long-term effects of some predictors on cyberbullying.

Additionally, this study examined the relationships between 11 proposed predictors and cyberbullying victimization. Similar to cyberbullying perpetration, risky ICT use was also a relatively strong predictor of cyberbullying victimization, while TB victimization was also another major contributor of cyberbullying victimization. The medium sized effect sizes of these two predictors indicate the need for educators and parents to pay more attention to TB victims and increase their awareness of cyber safety in order to protect them from cyberbullying victimization. In addition, weak associations were found between the frequency of ICT use, self-esteem, depression, moral disengagement, self-efficacy in defending, emotional management, parental interaction, parental mediation, TB perpetration, and cyberbullying victimization.

According to the results of the moderator analyses, the country of the sample significantly moderated the negative relationship between parental interaction and cyberbullying perpetration. Moreover, the negative relationship was stronger in Western countries than in Asian countries. One plausible explanation is that as compared to Asian parents, Western parents are more likely to employ autonomy-supportive style instead of punitive parenting style when interacting with their children

(Kim & Wong, 2002). Children with supportive parental behaviors tend to be less aggressive (Finkenauer, Engels, & Baumeister, 2005). As such, children in Western countries who interact frequently with their parents are less likely to cyberbully others than children in Asian countries.

Furthermore, the type of sampling method was found to significantly moderate the relationships between frequency of ICT use and cyberbullying perpetration and victimization. The type of sampling method was also found to be a significant moderator between parental interaction and cyberbullying perpetration. As compared to studies that had used random samples, the associations between the frequency of ICT use and cyberbullying perpetration and victimization were stronger in studies that had used non-random samples. In contrast, the relationship between parental interactions and cyberbullying perpetration was smaller in studies that used non-random samples than in studies that used random samples. One possibility for such differences might be due to the fact that most non-random samples were also respondents in niche environments (Paul et al., 2000). For example, one of the studies (Bauman, 2009) included in the meta-analysis examined the associations of frequency of ICT use and parental interaction with cyberbullying based on rural intermediate school students. In another study included in the meta-analysis, Festl et al. (2013) explored the influence of ICT use frequency on cyberbullying by focusing on academic track school students. Compared with regular schools, rural intermediate schools and academic track schools possess lesser opportunities and resources to provide workshops or seminars regarding cyberbullying for their students. As such, students in these niche schools who use ICT frequently might be more likely to be involved in cyberbullying than students in regular schools. In addition, parents living in rural areas are relatively less educated and are less likely to use supportive parenting practices when interacting with their children (Scott et al., 2012). Since children who interact frequently with their parents exhibit lower levels of aggression (Clauss-Ehlers, 2010), parental interaction in rural areas might, therefore, be less effective in

protecting children from cyberbullying when compared to parental interaction in urban areas. Based on these considerations, the variation in effect sizes across different studies may be due to the high proportion of students in niche schools or environments in non-random samples.

Next, age significantly moderated the relationships between two TB factors and cyberbullying perpetration as well as the association between TB victimization and cyberbullying victimization. Moreover, the relationships were stronger among studies that had focused on older people. One possible explanation is that young children do not own any personal digital devices and do not have unfettered access to family devices. Also, young children are typically under heavy parental supervision due to their young age. However, the privilege to access personal and family digital devices are gradually conveyed to children as they grow older and gain more independence. As such, when compared to children, adolescents and emerging adults are more likely to extend offline bullying to online. Similarly, age also significantly moderated the association of frequency of ICT use with cyberbullying victimization. Moreover, the strength of association was higher among studies which examined younger people instead of adults. It is plausible that adults are better able to manage their online behaviors and protect themselves when using ICT as compared to adolescents and children.

Finally, the type of media platform significantly moderated the associations between frequency of ICT use and cyberbullying perpetration and victimization. Frequency of social media use has a stronger association with cyberbullying perpetration and victimization than other media platforms. Indeed, many studies have documented that cyberbullying is most rampant on social media (e.g., Whittaker & Kowalski, 2015). One plausible explanation is that social media is extremely popular among children and adolescents, thus becoming an essential part of their social life. Moreover, social media integrates different aspects present in other media platforms such as online discussion forums, chat rooms, blogs, and e-mail, thereby allowing

users to send private messages, comment on postings by others, post personal information, and upload photos (Chen & Shi, 2014). As such, cyberbullying is more likely to manifest in social media than in other media (Kwan & Skoric, 2013).

Taken together, the findings obtained in this meta-analysis present several practical implications for educators and parents. For example, according to the findings, educators and parents could remind students to refrain from adding strangers as online friends and to avoid disclosing personal information online. Educators and parents should also encourage students to use ICT in appropriate ways in order to protect themselves from cyberbullying. In addition to media exposure, the results indicate that parent–child interactions and parental mediation are negatively associated with cyberbullying. In line with such findings, parents should make an effort to interact more frequently with their children, be more involved in their lives, and to better manage children’s ICT use to prevent cyberbullying.

2.6 Research Gaps

This meta-analysis has provided guidelines for the direction of future cyberbullying research. First, the moderator analysis indicated that as compared to other media platforms, frequency of social media use has a stronger effect on cyberbullying. Moreover, research has indicated that cyberbullying is most rampant on social media (Smith et al., 2008). However, there are only few studies which examined the predictors of cyberbullying on social media (e.g., Kwan & Skoric, 2013; Whittaker, & Kowalski, 2015). Thus, it is necessary to examine cyberbullying on social media. Secondly, although children make up the vast majority of offenders and victims of cyberbullying, only a few studies have examined predictors of cyberbullying perpetration or victimization in childhood. The moderator analysis revealed that age could significantly moderate the relationships between many predictors and cyberbullying perpetration and victimization. Thus, future research should explore cyberbullying among wider youth age groups and compare

cyberbullying across different age groups. Thirdly, most studies on cyberbullying used samples from North America and Europe, while limited studies focused on Asian samples. As pointed out, Asia has the highest level of cyberbullying (Microsoft, 2012). The moderator analysis indicated that cultural difference exists in the associations between parental interaction and cyberbullying perpetration. Moreover, previous research has indicated that cyberbullying varies across different cultures (Li, 2007). Next, existing studies have found that two personality traits reflecting positive views of the self – self-esteem and narcissism – are important to cyberbullying. Moreover, many researchers and educators have indicated that positive self-views are the primary predictors of many children and adolescent problems, especially anti-social behaviors (Barry, Grafeman, Adler, & Pickard, 2007; Owens, 1994). However, only a few studies to date have examined and compared the influences of narcissism and self-esteem on cyberbullying. Thus, it is interesting and valuable to investigate their effects on cyberbullying in future research. Last but not least, most existing studies focused on the risk factors of cyberbullying, but ignored protective factors, especially those from the social influence perspective. However, like traditional bullying, cyberbullying is heralded as a form of social behavior. As such, social agents, especially parents, could be effective in protecting children from media related-risks (Buijzen & Valkenburg, 2005; Maccoby, 1992; Livingstone & Helsper, 2008). Besides, online disinhibition effect attenuates the perpetrators' experience of empathy and diminishes self-censorship, which encourage children and adolescents to behave aggressively online. Parents naturally bear responsibility to help their children avoid online risky situations. While some studies have explored the influence of parental mediation on cyberbullying, these studies only considered parental mediation as a single factor. According to the parental mediation theory, parents usually employ many different strategies to reduce media negative effects on children. As such, it is significant to not only explore how parents manage their children's online activities, but also to identify which mediation strategies are more effective in reducing cyberbullying.

In response to the aforementioned research gaps, subsequent studies should investigate cyberbullying on social media with a focus on participants from different age groups (e.g., children) and different countries (e.g., Asia). More importantly, the influences of different parental mediation strategies and personality traits reflecting positive self-views on cyberbullying on social media should be examined. Given this, it is necessary to examine the mediation strategies that parents use to approach children's social media use, as these may differ from that used to manage children's television viewing and Internet use. To fulfill these objectives, Study 2 seeks to explore how parents manage their children's social media use, as well as to develop and validate a scale of parental mediation of social media. Following this, Study 3 intends to examine how different parental mediation strategies affect cyberbullying perpetration and victimization on social media among primary and secondary school students.

CHAPTER THREE

STUDY 2: HOW DO PARENTS MANAGE CHILDREN'S SOCIAL MEDIA USE? DEVELOPMENT AND VALIDATION OF A SOCIAL MEDIA PARENTAL MEDIATION SCALE ACROSS CHILD AND PARENT SAMPLES

As discussed in Study 1, although many extant studies have examined the factors underlying cyberbullying perpetration and victimization, there still remain certain significant research gaps. Specifically, Study 1 suggested that it is necessary to explore cyberbullying on social media with a focus on participants from different age groups and different countries. Moreover, the influence of different parental mediation strategies on cyberbullying on social media should be examined as well. To fulfill these objectives, this dissertation intends to investigate how different parental mediation strategies of social media affect cyberbullying on social media among primary and secondary school students. However, extant studies have only explored the categorization of parental mediation strategies used to manage television viewing and Internet use. In the current digital age, parents may use many different ways to manage their children's social media use (Chen, 2016). Thus, the current study intends to first investigate the strategies that parents adopt to manage their children's social media use, thereby contributing to the field of parental mediation of social media. Besides, this study seeks to develop and validate a scale of parental mediation of social media. This scale would be the first in this domain of research, and would be useful to researchers interested in this area of research.

3.1 Parental Mediation

According to the socialization theory (Maccoby, 2007), children are social learners who are affected by their contact or interactions with socialization agents, such as parents, peers, and the media. The socialization process results in various

social learning properties or socialization outcomes both cognitively and behaviorally (Maccoby, 2007). Parents are the primary agent of children's socialization (Caruana, & Vassallo, 2003) and play a crucial role in their children's interaction with the media (Buijzen & Valkenburg, 2005; Livingstone & Helsper, 2008; Lwin, Stanaland, & Miyazaki, 2008). Based on this, parental mediation of social media is potentially critical in preventing risks on social media, such as cyberbullying.

The parental mediation theory posits that parents use different strategies to mediate negative media effects (Clark, 2011). This theory is rooted in media effects and information processing theories as well as in interpersonal communication theories, and explains how interpersonal communication between parents and children reduces the negative effects of media on children (Clark, 2011; Shin & Ismail, 2014).

As the act of television viewing becomes a commonplace in homes, children have been increasingly exposed to various undesirable media content depicting violence, pornography, and materialism. This could result in negative socialization outcomes such as delinquency, materialism, and aggression (Nathanson, 2001). Parental mediation research was initially initiated to examine the ways that parents could use to manage their children's media use as well as how parental mediation may reduce negative media effects (Austin, 1993). Three broad strategies of parental mediation have been identified from research on parental mediation of television viewing: active mediation, restrictive mediation, and co-viewing (Nathanson, 1999, 2001; Valkenburg et al., 1999). Active mediation refers to the active explanation of media content to children. Restrictive mediation consists of restricting children's television viewing time and/or content. Co-viewing involves sharing media experiences with children without critical discussion about the media content. Existing research has found that these various types of parental mediation of television use could enhance children's understanding of television programs (Desmond, Singer, Singer, Calam, & Colimore, 1985) and mitigate the negative effects of television on children (Cantor & Wilson, 2003; Nathanson, 1999).

Over the years, the Internet has replaced television to be the most popular media form among children and adolescents (Liu, Ang, & Lwin, 2016). As such, parental mediation strategies have evolved and are now increasingly used to supervise and control the Internet use of children (Lwin et al., 2008; Mesch, 2009; Panek, 2013). However, due to the smaller screen sizes, different sitting positions, and reliance on the mouse among others, co-viewing is no longer a viable parental mediation strategy in the context of the Internet (Livingstone & Helsper, 2008). In other words, parents will typically employ active and restrictive mediation to manage the Internet use of their children. Moreover, these parental mediation strategies have been found to be effective in protecting children from online risks (e.g., Buijzen & Valkenburgh, 2005; Eklund & Bergmark, 2013; Lwin et al., 2008).

Recently, social media has become extremely popular among children and adolescents. However, social media also serves as a dangerous platform for cyberbullying, with many studies indicating the exceptionally high prevalence rates of cyberbullying on social media (e.g., Whittaker & Kowalski, 2015). Compared with traditional Internet websites or applications such as email and bulletin boards, social media integrates aspects of all these applications, thereby allowing individuals to interact with friends, acquaintances, and even strangers by sending private messages, audio clips, and videos (Chen & Shi, 2014). In other words, social media communication is much more complicated than the simpler acts of watching television or viewing online content. Besides undesirable content, children and adolescent may also experience various contact risks (where the individual participates in risky peer or personal communication) and conduct risks (where the individual's behavior contributes to the experiencing of risky content or contact) on social media (Livingstone, Kirwil, Ponte, & Staksrud 2013, Staksrud & Livingstone, 2009). Back in the television or the Internet age, parental mediation was simply used to address the risks of passive exposure to undesirable content. However, in the social media age, parental mediation is now required to address not only the risks arising from exposure

to a great amount of user-generated content, but also the risks that arise from online social interactions.

In addition, most social media platforms, such as Facebook, Twitter, and Instagram, include user profiles or personal sites, which allow people to post personal information, comment on postings by others, and upload photos or videos (Abhyankar, 2011). Thus, it is possible for parents to learn about their children's online behaviors by checking their social media accounts or profiles. Based on the above considerations, parental mediation strategies used to manage social media would vary largely from the mediation strategies used to manage children's television viewing and Internet use (Chen, 2016).

With the rising popularity of social media, parents are becoming increasingly concerned about their children's activities on social media, and have used various strategies to regulate their children's social media use (Panek, 2013). Some researchers have found that parental mediation targeted towards social media usage could reduce the amount of time that children spend on social media (Livingstone, Olafsson & Staksrud, 2013). However, the strategies adopted by parents to manage their children's social media use is still understudied in this area of research. Therefore, this study aims to explore conceptually different parental mediation strategies of social media, as well as develop and validate a scale for these strategies.

3.2 Method

3.2.1 To Identify Parental Mediation Strategies of Social Media

A focus group design was utilized to explore, identify, and classify parental mediation strategies of social media, as well as to develop items to be used in a survey for each category of parental mediation strategies of social media.

Research Design. A double-layer focus group design was used in this study in Singapore. Specifically, this study recruited two layers of participants – primary schools (students aged 9-12) and secondary schools (students aged 13-17). A group of

children and parents were sampled from each layer. According to the socialization theory, the importance of the parents' role in the socialization of children typically declines as the children grow older (Maccoby, 2007). Parents are the main socialization agents for their children (Cariuana & Vassallo, 2003; Maccoby, 1992). However, when individuals enter adolescence, they begin to spend more time with external socialization agents, and to pursue autonomy and independence. In this regard, parents might use different strategies for children and adolescents to mediate their social media use. Besides, the groupings based on students' level of study allows for a more homogenous sample of participants, which would increase the participants' willingness to express themselves (Morgan, 1998). Thus, the focus groups used the double-layer design.

Procedure. Focus groups were conducted. These consisted of two parent groups and two child groups. These four groups were deemed sufficient as the amount of new information has reached a saturation point. Specifically, each focus group comprised of six participants with balanced gender compositions (Morgan, 1998). The total of four focus groups consisted of 12 parents and 12 children.

Upon receiving approval from the NTU Institutional Review Board (IRB), this study invited Singaporean primary and secondary school students and their parents to participate in the study between April and June 2015. This study recruited one parent from each family. During the scheduled dates of the focus groups, two on-going sessions (one parent group and one student group) were held simultaneously in separate meeting rooms in community centers or hotels. Prior to conducting the focus groups, the children and parents were informed of the purpose of the study and were reminded of their voluntary participation. The participants were also informed that they could exit the study at any time with incurring any penalty. Following this, both the parent and child participants were guided by moderators to discuss the strategies used by parents to manage the children's social media use. Finally, a S\$100 gift voucher at a local grocery store was offered as a token of appreciation for every pair of

parent and child who participated in the focus group. If only either one member of the parent-child pair participated, a \$50 grocery store gift voucher was offered instead.

Analysis. In order to fulfil the research objectives, the four focus groups were tape recorded. Their comments were subsequently transcribed and analyzed. Conventional content analysis was employed to analyze the focus group transcripts (Chen & Yang, 2015; Hsieh & Shannon, 2005). First, two coders read the transcripts multiple times in order to achieve immersion and to obtain a sense of the situation (Tesch, 1990). The two coders not only highlighted exact words from the transcript to be used as codes, but also generated new codes to capture key concepts that came up with the initial coding scheme (Morse & Field, 1995). Subsequently, these codes were sorted into categories based on how they were related and linked to each other. Finally, each category, subcategory, and code was defined. The acceptability and reliability of the designated categories were tested through multiple codings by two coders.

3.2.2 To Develop and Validate the Scale

Through the use of focus groups, this study firstly identified and categorized parental mediation strategies of social media. An initial scale was subsequently for them. However, it still remained unclear whether the categorization formed based on the focus groups was accurate. Similarly, the validity and reliability of the scale remained uncertain as well. To address such concerns, the initial scale along with its constructs were further refined and validated across both child and parent samples using the survey method.

Sample and Procedures. Upon receiving approval from the NTU Institutional Review Board (IRB) and Ministry of Education in Singapore for the survey study, this study recruited upper primary school students (i.e., Primary 4 to 6 students), secondary 1 to 5 school students, and their parents to complete questionnaires between the period of June and December 2015. Multi-stage cluster sampling was used to randomly select four primary schools (one school from each of the North, South, East, and West

regions officially designated by the Singapore government) and four secondary schools (one school from each of the North, South, East, and West regions officially designated by the Singapore government) as participating schools. At the first stage, a total of fifteen primary schools (from all regions) and twelve secondary schools (from all regions) were invited to participate in the study, in which four primary and four secondary schools came on board. The response rates of the primary and secondary schools that agreed to participate were 26.7% and 33.3% respectively.

This study used a parent-child matched sample design, in which the parents who answered the questionnaires were the parents of the students sampled. This yielded a total sample size of 1,424 students and 1,206 parents. Specifically, 635 upper primary school students and 442 of their parents, as well as 789 secondary school students and 764 of their parents participated in the study. The final response rate of the student participants was 69.6% (60.7% for primary schools and 78.4% for secondary schools), and the final response rate of the parent participants was 59.6% (44.2% for primary schools and 75.0% for secondary schools). The margin of error was approximately $\pm 3\%$ at the 95% confidence level.

Instrument. The initial scale of parental mediation of social media for children and parents was included in the child and parent questionnaire, together with the demographic questions. On a 7-point response scale, parent participants were asked to rate the extent to which they perform each parental mediation behavior for their child. Similarly, child participants were also asked to rate on a 7-point response scale the extent to which their parents perform each parental mediation behavior on them.

Analysis. As recommended by Arnold, Arad, Rhoades, and Drasgow (2000), a two-pronged approach was used to test the initial scale of parental mediation of social media. First, I investigated both inter-item and item-total correlations for each category of parental mediation across the child and parent samples (Churchill, 1979). The items with low inter-item and item-to-total correlations in either the child or parent samples were removed. Sweeney and Soutar (2001) indicated that correlations of less than .30

suggest that the items generate more noise than information, and hence should be removed. After that, confirmatory factor analysis (CFA) with maximum-likelihood (ML) parameter estimation was performed across the child and parent samples using *Mplus7.0*. Compared with exploratory factor analysis (EFA), CFA is a more suitable method to refine and improve the measurement model by assessing whether the factor structure of the prespecified instrument provides a good fit to the data and whether the structure fits as parsimoniously as other models (Floyd & Widaman, 1995). In line with the recommendations of Bollen and Long (1993), several fit indices were used to evaluate the appropriateness of the model, including the ratio of chi-square to its degree of freedom, Comparative Fit Index (CFI), Tucker Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA). Finally, the reliability, convergent validity, and discriminant validity of the scale were tested.

3.3 Results

3.3.1 Identifying Parental Mediation Strategies of Social Media

The four focus groups included 24 participants and comprised of 12 parents and 12 children. Among the parent focus group, there were 8 females and 4 males. The mean age was 38 years (33-46). For child focus groups, there were 5 females and 7 males; 6 were primary school students and 6 were secondary school students. The mean age was 13 years (9-17).

According to the results from the focus groups, four different parental mediation strategies, including active mediation, restrictive mediation, authoritarian surveillance, and monitoring, were identified.

Active Mediation. The parent participants expressed that they typically use active mediation strategy to manage their children's social media use. One parent said, "*I tell my child [that] social media is not such [a] good [thing] and remind her not to release [her] real name, address and phone to strangers on social media.*" Another parent expressed, "*I ask my child to tell me [if] something happens on social media,*

then I give some advice to her and explain the potential risks on social media.” The child participants echoed the same views. One child said, *“my mum tells me not to do stupid things on social media..., she gives me some news about online risks such as cyberbullying, Internet fraud, cyberstalking to educate me how to use social media well and tell me to stop using social media when [I] feel uncomfortable.”* Another child mentioned, *“my parents do not give me many restrictions on my social media use, but they give me some suggestions... they suggest me not to believe others on social media because on social media, people are not always who they say they are.”*

Restrictive Mediation. Participants claimed that most parents tend to employ restrictive mediation strategy to regulate their children’s social media use. rules are usually set to restrict children’s behaviors on social media. One parent said, *“Yes, I think it is important to give them some rules to let children know what they can or cannot do on social media and what social media [platforms] they can use...I don’t want my child to use WeChat to get to know strangers.”* Another parent said, *“I don’t want to see [that] my children use social media only for social [interactions] or gaming, so I only allow them to use social media for study [purposes].”* Besides, most participants, including parents and children, indicated that time restriction as the most popular strategy used by parents to manage their children’s social media use. One child said, *“my parent only allow[s] me to use social media on weekends and holidays.”* Another child expressed, *“they always ask me to finish homework then play.”* A parent mentioned, *“I don’t want my child to spend too much time on social media, which may affect his study. So I ask him to finish [his] homework first. I think it is better to spend no more than one hour online per day.”*

More interestingly, some parents indicated that the methods used to manage younger and older children are different. Parents were more likely to restrict the social media use of younger children, but not the older children. For example, one parent mentioned, *“I restrict my younger son’s time with social media. But for the older one, I prefer to give him some advice instead of restrictions.”*

Authoritarian Surveillance. Many parents who were familiar with social media would log on to their children's social media accounts to check or track their children's behaviors on social media. One parent said, *"I ask my daughter to share her Facebook account and password with me, so [that] I can log in her account to check her conversations with others and [her] friend list on Facebook."* Another parent said, *"I have my child social media accounts and passwords. I often log in his accounts to check his activities on social media."* One child also mentioned, *"My mother has my Facebook account. Sometimes, she logs in my Facebook to check what I do on Facebook."*

Monitoring. Many parents did not log on to their child's social media account, but added their child as a social media friend in order to browse their child's social media profile and to follow their statuses. One parent expressed, *"I know my son[']s Facebook accounts and add him as [my] friend so I can see his profile and to know what he does on Facebook."* Besides, one child said, *"My mum knows my Facebook and Instagram accounts. She adds me as her friend to check my status."* More interestingly, one child expressed, *"Now I do not say too much on my Facebook because my parents add me as [their] friend... I prefer to update my status on Twitter or other places."*

The results of the focus group discussions provided an initial classification of parental mediation strategies of social media. The results also elicited information to develop items for each category of parental mediation strategies. Specifically, the items were developed to measure each category based on the responses from the focus group participants and the previous scale. Items AM1 to AM4 for active mediation and items RM1 to RM 5 for restrictive mediation were modified from the previous scale of parental mediation of Internet (Lwin et al., 2008), whereas other items were fully based on the findings of the focus groups. Following this, these items were modified to become simple and generic enough to be easily understood and answered by younger children. Finally, an initial 17-item scale with the four subscales (3-5 items per

construct) was created to generate two survey questionnaires for the children and parents (see Table 3.1 and Table 3.2).

Table 3.1 The initial 17-item scale of parental mediation scale (child's version).

Constructs	ID	Items
Active mediation	AM1	How frequently do your parents tell you about the information you can disclose on social media?
	AM2	How frequently do your parents remind you not to give out personal information on social media?
	AM3	How frequently do your parents tell you to stop any experience on social media if you feel uncomfortable or scared?
	AM4	How frequently do your parents explain to you about the dangers of social media?
Restrictive mediation	RM1	How frequently do your parents restrict the type of social media platforms you can visit?
	RM2	How frequently do your parents set rules regarding your access to social media, such as Facebook, Twitter, YouTube, Instagram, WhatsApp, Line, etc?
	RM3	How frequently do your parents limit the kind of activities you can do on social media?
	RM4	How frequently do your parents restrict the amount of time you can use social media?
	RM5	How frequently do your parents limit you to using social media only for school work?
Authoritarian surveillance	AS1	How much do you agree that your parents ask you to share your social media account(s) and password(s) with them?
	AS2	How frequently do your parents log in to your social media account(s) to check your social media friends list?
	AS3	How frequently do your parents log in to your social media account(s) to check your conversations with others?
	AS4	How frequently do your parents log in to your social media account(s) to check the games you play?
	AS5	How frequently do your parents log in to your social media account(s) to check the pictures you post?
Monitoring	M1	How much do you agree that your parents know your social media account(s)?
	M2	How frequently do your parents check your social media profile(s)?
	M3	How frequently do your parents add you as a friend on social media to check what you post on social media?

Table 3.2 The initial 17-item scale of parental mediation scale (parent's version).

Constructs	ID	Items
Active mediation	AM1	How frequently do you tell your child about the information they can disclose on social media?
	AM2	How frequently do you remind your child not to give out personal information on social media?
	AM3	How frequently do you tell your child to stop any experience on social media if they feel uncomfortable or scared?
	AM4	How frequently do you explain to your child about the dangers of social media?
Restrictive mediation	RM1	How frequently do you restrict the type of social media platforms your child can visit?
	RM2	How frequently do you set rules regarding your child's access to social media, such as Facebook, Twitter, YouTube, Instagram, WhatsApp, Line, etc?
	RM3	How frequently do you limit the kind of activities your child can do on social media?
	RM4	How frequently do you restrict the amount of time your child can use social media?
	RM5	How frequently do you limit your child to using social media only for school work?
Authoritarian surveillance	AS1	How much do you agree that you ask you child to share their social media account(s) and password(s) with you?
	AS2	How frequently do you log in to your child's social media account(s) to check their social media friends list?
	AS3	How frequently do you log in to your child's account(s) to check their conversations with others?
	AS4	How frequently do you log in to your child's social media account(s) to check the games they play?
	AS5	How frequently do you log in to your child's social media account(s) to check the pictures they post?
Monitoring	M1	How much do you agree that you know your child's social media account(s)?
	M2	How frequently do you check your child's social media profile(s)?
	M3	How frequently do you add your child as a friend on social media to check what they post on social media?

3.3.2 Development and Validation of the Scale

Based on the survey results, only one item (AM1) was eliminated due to its low inter-item and low item-total correlations which were less than .30 in both the parent and the child samples (Hegarty, 2005). The remaining 16 items were included in the resulting modified model, which is depicted in Figure 3.1.

Furthermore, according to the recommendations by many scholars (Kohring & Matthes, 2007; Schultz, 2000; Sweeney, Geoffrey, Soutar, 2001), this study tested the modified four-factor model against two additional models: a one-factor model and a three-factor model. The one-factor model classified parental mediation of social media as a unidimensional construct. To test the one-factor model, all 16 items were loaded on a single factor. The three-factor model suggested that the new mediation strategies – authoritarian surveillance and monitoring represent a single functional dimension rather than two dimensions. To test this model, the first 8 items were loaded on active mediation and restrictive mediation factor respectively, consistent with the modified four-factor model, while the remaining 8 items measuring authoritarian surveillance and monitoring were loaded on one factor.

The goodness-of-fit summary is shown in Table 3.3. The model adequacy was significantly compared using X^2 difference tests. First, the null model was rejected in both the child sample ($X^2 = 8756.58$, $df = 120$, $X^2/df = 72.97$, RMSEA = .23, GFI = .00, TLI = .00) and the parent sample ($X^2 = 10239.30$, $df = 120$, $X^2/df = 85.37$, RMSEA = .17, GFI = .00, TLI = .00). The one-factor model showed a better, but still unacceptable fit in both the child sample ($X^2 = 4272.51$, $df = 108$, $X^2/df = 39.56$, RMSEA = .17, GFI = .52, TLI = .46) ($\Delta X^2(12) = 4484$, $p < .001$) and the parent sample ($X^2 = 2793.45$, $df = 99$, $X^2/df = 28.22$, RMSEA = .15, GFI = .73, TLI = .68) ($\Delta X^2(21) = 7445.85$, $p < .001$). The three-factor model was much improved, but did not provide an acceptable fit in both the child sample ($X^2 = 806.98$, $df = 97$, $X^2/df = 8.32$, RMSEA = .07, GFI = .92, TLI = .90) ($\Delta X^2(11) = 3465.56$, $p < .001$) and the parent sample ($X^2 = 558.72$, $df = 96$, $X^2/df = 5.82$, RMSEA = .06, GFI = .95, TLI = .94) ($\Delta X^2(3) = 2234.73$,

$p < .001$). Finally, the proposed four-factor model showed a large improvement over the two alternative models. The fit indices for this model adequately satisfied the level of aspiration in both the child sample ($X^2 = 390.95$, $df = 94$, $X^2/df = 4.16$, RMSEA = .05, GFI = .97, TLI = .96) ($\Delta X^2(3) = 416.33$, $p < .001$) and the parent sample ($X^2 = 361.57$, $df = 93$, $X^2/df = 3.89$, RMSEA = .05, GFI = .97, TLI = .97) ($\Delta X^2(3) = 197.15$, $p < .001$)

Table 3.3 Model fit indices for each model.

Factor Models	X^2	df	X^2/df	GFI	TLI	RMSEA
<i>Child sample</i>						
Null model	8756.58***	120	72.97	.00	.00	.23
One-factor model	4272.51***	108	39.56	.52	.46	.17
Three-factor model	806.98***	97	8.32	.92	.90	.07
Four-factor model	390.95***	94	4.16	.97	.96	.05
<i>Parent sample</i>						
Null model	10239.30***	120	85.33	.00	.00	.26
One-factor model	2793.45***	99	28.22	.73	.68	.15
Three-factor model	558.72***	96	5.82	.95	.94	.06
Four-factor model	361.57***	93	3.89	.97	.97	.05

Note. *** $p < .001$.

In order to further ensure the psychometric properties of the measures, the reliability, convergent validity, and discriminant validity of the proposed four-factor scale across the child and parent samples were examined (Bagozzi & Yi, 1988, Fornell & Larcker, 1981). First, the reliability was evaluated using the composite reliability values. Hair, Anderson, Tatham, and William (1998) recommended an acceptance level of .70 for the composite reliability. As summarized in Table 3.4 and Table 3.5, all factors in the model have a value greater than .83 in the child sample and .89 in the parent sample, thereby meeting the criterion. Second, the convergent validity was tested by two criteria: (1) all factor loadings should be greater than .60 and (2) the Average Variance Extracted (AVE) by each factor should be higher than .50, the variance due to measurement error for that construct (Hair, Anderson, Tatham, &

William, 2010). As listed in Table 3.6, all factor loadings exceeded .60. Table 3.4 and Table 3.5 showed that all AVEs were larger than .50 in both the child and parent samples. Thus, convergent validity was established. Finally, to test discriminant validity, Fornell and Larcker (1981) indicated that the square root of the AVE (SRAVE) should exceed the correlations shared between the factor and other factors. Table 3.4 and Table 3.5 presented the correlations among factors and SRAVE on the diagonal. Moreover, SRAVE (diagonal values) was greater than the shared correlation between each pair of factors in both the child and parent samples. Hence, the discriminant validity of the proposed model measures was reasonable.

Table 3.4 Cronbach's alpha reliability and correlations in the child sample.

	Cronbach's alpha	CR	AVE	SRAVE	AM	RM	AS
AM	.87	.83	.62	.78			
RM	.89	.89	.61	.78	.63		
AS	.88	.91	.71	.84	.35	.55	
M	.83	.84	.63	.80	.60	.61	.60

Note. N=1,424; AM: Active mediation; RM: restrictive mediation; AS: Authoritarian surveillance; M: Monitoring; CR: Composite reliability. AVE: Average variance extracted values, SRAVE: the square root of AVE.

Table 3.5 Cronbach's alpha reliability and correlations in the parent sample.

	Cronbach's alpha	CR	AVE	SRAVE	AM	RM	AS
AM	.89	.90	.74	.86			
RM	.92	.92	.69	.83	.67		
AS	.95	.96	.84	.92	.44	.61	
M	.89	.89	.73	.86	.54	.61	.85

Note. N = 1,206; AM: Active mediation; RM: restrictive mediation; AS: Authoritarian surveillance; M: Monitoring; CR: Composite reliability. AVE: Average variance extracted values, SRAVE: the square root of AVE.

Table 3.6 Descriptive statistics and factor loading for each observed variable.

Items	Factor loading	<i>M</i>	<i>SD</i>
Child sample (<i>N</i> = 1,424)			
AM2	.81***	4.62	2.08
AM3	.81***	4.33	2.08
AM4	.86***	4.39	2.09
RM1	.85***	3.48	2.11
RM2	.82***	3.77	2.12
RM3	.70***	3.74	2.16
RM4	.80***	4.09	2.15
RM5	.73***	3.09	2.07
AS1	.61***	3.82	2.07
AS2	.82***	2.67	2.10
AS3	.77***	2.76	2.16
AS4	.79***	2.67	2.12
AS5	.81***	2.71	2.18
M1	.82***	3.64	2.24
M2	.83***	3.52	2.20
M3	.74***	3.74	2.28
Parent sample (<i>N</i> = 1,206)			
AM2	.84***	4.39	1.68
AM3	.85***	5.01	1.71
AM4	.88***	4.82	1.83
RM1	.89***	4.98	1.71
RM2	.86***	4.31	2.00
RM3	.91***	4.46	1.98
RM4	.75***	4.85	1.82
RM5	.76***	4.00	2.04
AS1	.80***	3.60	2.20
AS2	.91***	3.06	2.10
AS3	.91***	2.94	2.90
AS4	.88***	2.92	2.11
AS5	.91***	3.07	2.12
M1	.88***	3.75	2.21
M2	.89***	3.69	2.17
M3	.76***	4.01	2.23

Note. AM: Active mediation; RM: restrictive mediation; AS: Authoritarian surveillance; M: Monitoring; CR: composite reliability. ****p* < .001.

Figure 3.1 The resulting modified measurement model of parental mediation of social media.

3.4 Discussion

The purpose of this particular study was to deal with the conceptualization and operationalization of parental mediation of social media. First, this study conducted focus groups with children and parents to identify four conceptually distinct parental mediation strategies of social media. These strategies were labeled as active mediation,

restrictive mediation, authoritarian surveillance, and monitoring. The first two strategies were similar with the ways that parents use to manage children's behaviors on the Internet (Lwin et al., 2008; Livingstone et al., 2011). First, according to most previous studies, active mediation usually refers to parents discussing about media content during the child's engagement with the medium (Lwin et al., 2008; Nathanson 2001). However, recent studies have indicated that besides explaining or discussing media content with children, active mediation also includes the act of guiding safe Internet behavior in children (Livingstone et al., 2011; Haddon, 2012), which is similar with the findings of the focus groups. Thus, active mediation of social media includes not only discussing social media with children, but also guiding children on the appropriate use of social media. Besides, the focus group findings about restrictive mediation of social media were analogous to what has been defined in previous studies on television and Internet use (Lwin et al. 2008; Livingstone et al., 2011; Nathanson 2001; Valkenburg et al., 1999). It involves setting rules to not only limit the time children spend on social media, but also the activities that children perform on social media. More interestingly, the results showed that parents tended to use restrictive mediation to regulate their children, and active mediation to manage adolescents. This is in line with extant research (Pasquier, 2001; Nikken & Jansz, 2006). One plausible explanation is that the influence of restrictive mediation on children's media use declined as the children grew older (Maccoby, 2007). When individuals enter adolescence, they start to pursue autonomy and independence (Blos, 1979). Thus, although children tend to obey their parents, adolescents typically react to parental authority if parents made strict controls on children's media use (Lwin et al., 2008; Nikken & Jansz, 2011). With this consideration, parents typically engage in restrictive mediation for children and active mediation for adolescents.

Furthermore, two new strategies – authoritarian surveillance and monitoring were widely used to manage the children's social media use. These two strategies arose due to the unique social media features, such as personal accounts, one-to-one

messaging, and user profiles. As such, such strategies differed greatly from the conventional parental mediation strategies of television or Internet use. Specifically, according to findings from the focus groups, some parents requested their children to share their social media accounts and passwords with them. This allowed parents to log into their children's social media accounts to track all their online content such as open posts, comments and statuses on social media profiles as well as to check their private conversations (e.g., one-to-one messaging) and interactions with others on social media. Although this new, strict and demanding parental mediation category lacks a conceptual definition, Pew Internet (2016) has indicated that it is quite common for parents to request for the social media passwords of their young children. Moreover, the results also revealed that many parents frequently log on to social media to surveil or track children's activities on social media regularly. Like the other parental mediation strategies, this new mediation strategy was employed to protect children from the risks on social media. However, it enforces strict obedience and seriously invades children's privacy. As such, this strategy was labeled as authoritarian surveillance.

In contrast, the focus group findings revealed that several parents employed a relatively gentler strategy – monitoring to follow or check children's behaviors on social media. These parents checked their children's social media profiles directly and/or added their children as a social media friend to follow their children's social media postings. This is in line with findings by Pew Internet (2016), which found that more than 50% of parents have checked their teen's social media profiles. Moreover, around 45% of parents have added their children as Facebook friends (Pew Internet, 2016). Similar to authoritarian surveillance, monitoring was also used to check the children's social media activity. However, monitoring was only used to check on the children's open posts, comments and statuses on social media profiles, but not their private conversations and interactions with others on social media.

Besides the categorization of parental mediation strategies of social media, the results of the focus group elicited information which was used to develop items for each category of parental mediation. Specifically, based on the information from focus groups and the previous scale of parental mediation of Internet use (Lwin et al., 2008), an initial four-factor scale was created to measure parental mediation of social media.

Additionally, in order to refine and validate the initial scale, this study first removed one item, which had a low inter-item and low item-total correlations, to yield a resulting modified model based on the initial scale of parental mediation of social media. Next, this study tested this modified four-factor model against two additional models using CFA across both child and parent samples. The results revealed that this postulated model is superior to a one-factor model and a three-factor model, and provides a well-acceptable model fit to the observed data. Furthermore, the reliability, convergent validity, and discriminant validity of the postulated four-factor scale were tested. The results showed that the scale and its four-factor structure have sound and stable psychometric properties. This scale was also reliable and valid in the measuring of both parent's and child's perspectives of parental mediation of social media.

Taken together, the present research offered several enlightening contributions. The current study is the first to explore the conceptualization and operationalization of parental mediation of social media. The results of this study highlighted methods that parents used to manage their children's social media use. The findings also identified four conceptually distinct parental mediation strategies of social media, thereby making a significant contribution to the parental mediation theory. In addition, this study developed the first theory-derived, successively validated and reliable scale for parental mediation of social media, which will be of great use to scholars interested in this area of research. As such, the results of this study would be valuable for future studies in the domain of parental mediation and risks on social media.

Based on the four conceptually distinct parental mediation strategies of social media identified and the scale validated, the following study (Study 3) will explore and

differentiate the influences of the four different parental mediation strategies on cyberbullying on social media. Also, Study 2 created and validated two different versions of scale for children and parents. The parent-agreement in reports of parental mediation and its effects on the effectiveness of the different parental mediation strategies would also be examined in the following study.

CHAPTER FOUR

STUDY 3: HOW PARENTAL MEDIATION AND THE PERSONALITY TRAITS PREDICT CYBERBULLYING PERPETRATION AND VICTIMIZATION ON SOCIAL MEDIA?

The previous chapter of the dissertation has identified four conceptually distinct parental mediation strategies of social media, as well as developed and validated a scale for these strategies. However, the effectiveness of these parental mediation strategies in addressing cyberbullying on social media, as well as the specific ways that these strategies work on cyberbullying have yet to be examined. To address this research gap, this study aims to investigate the associations between different parental mediation strategies of social media (validated in Study 2) with cyberbullying perpetration and victimization on social media between primary and secondary school students. Furthermore, numerous researchers have proposed that the success of parental mediation outcomes may be dependent on children's acceptance and understanding of parental mediation messages as well as their age group (Buijzen, Rozendaal, Moorman, & Tanis, 2008; Fujioka & Austin, 2003; Grusec & Goodnow, 1994; Lwin, Stanaland, & Miyazaki, 2008). In response, this study seeks to investigate whether and how the third-person perception, parent-child agreement in reporting parental mediation, and the age of the children would moderate the effectiveness of parental mediation strategies. In addition, this study also aims to explore the associations between two personality traits reflecting positive self-views – self-esteem and narcissism – with cyberbullying.

4.1 Self-esteem and Narcissism

Personality traits have been highlighted in research concerning deviance and delinquency. In particular, much attention has been directed to two constructs of interest: self-esteem and narcissism (e.g., Barry, Frick, & Killian, 2003). Several

researchers have indicated that narcissism and high self-esteem both entail positive views of the self (Brummelman, Thomaes, & Sedikides, 2016; Campbell, Rudich, & Sedikides, 2002). In addition, narcissism has been considered as a form of excessive self-esteem or defensive high self-esteem (Brummelman et al., 2016; Pulver, 1986). However, these two constructs are critically different, especially in terms of the interpersonal implications of these traits. Narcissism is harmful to interpersonal relationships, while in contrast, self-esteem could be beneficial (Campbell et al., 2002). Specifically, narcissists tend to believe that they are superior to others (Cain, Pincus, & Ansell, 2008; Campbell et al., 2002). People possessing high self-esteem usually feel satisfied with themselves as a person. Based on such findings, these two personality traits may have differing influences on social interactions among children and adolescents.

Self-esteem refers to “a favorable or unfavorable attitude towards the self” (Rosenberg, 1965 p. 15). It drives the social behaviors of children and adolescents (Patchin & Hinduja, 2010). Many studies have explored the association between self-esteem and traditional bullying. A significant body of evidence has revealed that people who possess low self-esteem are more likely to be victims of traditional bullying (e.g., Egan & Perr, 1998; Salmivalli, Kaukiainen, Kaistaniemi, & Lagerspetz, 1999). However, the direction of the relationship between self-esteem and traditional bullying perpetration is inconsistent. Both positive and negative relationships have been reported in previous studies (e.g., Frisen, Jonsson, & Persson, 2007; Rigby & Slee, 1991). With the rise of computer-mediated communication (CMC), social interactions have been extended from offline to online contexts. A few studies have attempted to explore the association between self-esteem and cyberbullying. Specifically, Perren, Dooley, Shaw and Cross (2010) and C énat et al. (2014) suggested that self-esteem was negatively associated with cyberbullying victimization. In other words, individuals with low self-esteem are more likely to be targeted as victims of cyberbullying, as low self-esteem could lead to weaker social bonds, which places

children and adolescents at a higher risk of victimization (Donnellan et al, 2005, Perry, Hodges, & Egan, 2001). Besides, Yang et al. (2013) and Brewer and Kerslake (2015) consistently indicated that low self-esteem was predictive of greater cyberbullying perpetration. Ostrowsky (2009) indicated that people with low self-esteem might externalize blame for their problems against feelings of inferiority and shame, which leads to aggressive behaviors towards others. Moreover, individuals possessing low self-esteem are able to take on more powerful roles in anonymous online environments than in offline interactions. In other words, they are more likely to step into the role of perpetrator to take revenge or to assert themselves online (Brewer & Kerslak, 2015).

Narcissism refers to “a personality trait reflecting a grandiose and inflated self-concept” (Buffardi & Campbell, 2010, p.1304). Extant research has documented that narcissists are more likely to be involved in traditional bullying as both victims and perpetrators (e.g., Fanti & Henrich, 2014; McCullough, Emmons, Kilpatrick, & Mooney, 2003). With regard to cyberbullying, few studies have shown that narcissists are more likely to cyberbully others than those with a low level of narcissism (e.g., Ang, Tan, & Mansor, 2011; Workman, 2010). It is plausible that narcissists do not have a burning desire to establish deep and intimate bonds with others; rather, they strive to surpass others, to dominate others, and to use others (Campbell et al., 2002). As such, they may have more conflicts with others. The empirical findings may also be explained by the social dominance theory. Specifically, narcissists tend to view themselves as people with superior social statuses. Moreover, they may consider victimizing others as a way to pursue or establish a higher social status (Braithwaite, Ahmed, & Braithwaite, 2009; Cooper & Blumenfeld, 2012). Based on this reasoning, narcissists would appear to be more likely to engage in cyberbullying perpetration.

Although limited studies have examined the association between narcissism and cyberbullying victimization, this does not mean that narcissism is not an important element of cyberbullying victimization. First, narcissists generally have a need for attention and admiration (Wang & Stefanone, 2013). They tend to engage in self-

presentation to boast their accomplishments and abilities on social media (Buffardi & Campbell, 2008; Carlson, Vazire, & Oltmanns, 2011). During the process of self-presentation, narcissists disclose their personal information, upload their photographs, and frequently share their locations or statuses (Christofides, Muise, & Desmarais, 2009; Ryan & Xenos, 2011). These places them at a higher risk of being victims of cyberbullying. Furthermore, according to the social dominance theory (Blumenfeld, 2005), narcissists may engage in risky behaviors on social media in order to attain a higher status relative to others. Unless others accept their self-appointed high social hierarchy and behaviors, conflicts and aggression are likely to ensue (Braithwaite, Ahmed, & Braithwaite, 2009). Therefore, narcissists are more likely to be involved in cyberbullying on social media as both perpetrators and victims.

In light of the aforementioned, this study posits the following hypotheses:

H1: Self-esteem is negatively associated with cyberbullying perpetration on social media.

H2: Self-esteem is negatively associated with cyberbullying victimization on social media.

H3: Narcissism is positively associated with cyberbullying perpetration on social media.

H4: Narcissism is positively associated with cyberbullying victimization on social media.

4.2 Effectiveness of Parental Mediation

Parental mediation theory indicates that parents adopt various strategies to prevent or reduce media's negative effects on children (Clark, 2011). A well-established body of research has documented that parental mediation is effective in reducing the negative effects of media on children.

Early research on parental mediation has revealed that parental mediation strategies used to manage television viewing could not only reduce the amount of time

children spend watching television, but also enhance their understanding of television content (Desmond, Singer, Singer, Calam, & Colimore, 1985) as well as reduce the likelihood of negative socialization outcomes, such as television-induced aggressive inclinations (Nathanson, 1999), advertising-induced materialistic attitudes, and psychological symptoms (Cantor & Wilson, 2003).

With the widespread use of the Internet, especially social media, children and adolescents are now exposed to a significant amount of inappropriate content and undesirable interaction. In order to ensure the online safety of their children, a growing number of parents have attempted to apply various mediation strategies to control and manage their children's information and communication technologies (ICT) use. These mediation strategies have been found to decrease the amount of time children spend online (de Morentin, Cortés, Medrano, & Apodaca, 2014; Vaala & Bleakley, 2015; Warren & Bluma, 2002), but also protect children from the different kinds of online risks, such as content risks (where the child is a recipient of inappropriate content, such as pornography and violence), contact risks (where the child participates in risky peer or personal communication), and conduct risks (where the child's behaviors contribute to the likelihood to experience risky content or contact) (Livingstone, Kirwil, Ponte, & Staksrud 2013, Staksrud & Livingstone, 2009; Tartari, 2015). Specifically, Kirwil (2009), Leung and Lee (2012), and Rasmussen, Ortiz and White (2015) demonstrated that parental mediation could restrict children's exposure to violent, sexual, and other harmful content. Besides, some studies have indicated that parental mediation could decrease the likelihood of children posting personal information online (Lwin et al., 2008; Shin, Huh, & Faber, 2012), adding strangers as online friends (Shin & Ismail, 2014), and meeting face-to-face with strangers they met online (Sasson & Mesch, 2014).

Additionally, with the substantial presence of cyberbullying, scholars have emphasized the role of parents in protecting children from cyberbullying (Mesch, 2009; Navarro, Serna, Martinez, and Ruiz-Oliv, 2013). Indeed, compared with

traditional bullying, cyberbullying has no physical boundaries, and may occur anywhere. As such, the presence of a responsible adult becomes more elusive, thereby placing more burden on parents to address the cyberbullying issue. Furthermore, several studies have attempted to examine the role of parental mediation on cyberbullying perpetration and victimization. These studies have differentiated cyberbullying perpetration and victimization as conduct and contact risks (Livingstone, Kirwil, Ponte, & Staksrud, 2013). Most of these studies have revealed that parental mediation could reduce the likelihood of children becoming cyberbullying victims and perpetrators. Specifically, Chang et al. (2015) and Zhou et al. (2013) found that children under higher levels of parental mediation were less likely to cyberbully others. Besides, Navarro, Serna, Martnez, and Ruiz-Oliva (2013) showed that rules restricting excessive information sharing and parental awareness of installed software were effective in protecting children from cyberbullying victimization. Mesch (2009) and Marcum, Higgins, and Ricketts (2010) indicated that parental restrictions on the media platforms or websites that children were allowed to visit also decreased the likelihood of cyberbullying victimization. In the context of social media, similar to parental mediation to manage Internet use, active mediation could also help children become more educated social media users and be more aware of potential risks on social media (Lwin et al., 2008; Valkenburg et al. 1999). Restrictive mediation could help children internalize parental rules for behaviors on social media (Roopnarine, Church, & Levy, 1990). With regards to authoritarian surveillance and monitoring, children may be more likely to normalize their online behaviors if they were aware of their parents checking or tracking their open or private information on social media (Pew Internet, 2016). Based on these consideration, it is expected that the four parental mediation strategies of social media would decrease the risk of children becoming perpetrators and victims of cyberbullying on social media.

Nevertheless, different parental mediation strategies might have varying levels of effectiveness in preventing cyberbullying. Specifically, a number of studies have

suggested that compared with other mediation strategies, active mediation is more effective in mitigating the negative effects of the Internet on children, such as exposure to undesirable media content, problematic online gaming, and privacy disclosures (e.g., Benrazavi, Teimouri, & Griffiths, 2015; Buijzen & Valkenburg, 2005; Shin et al., 2012; Wisniewski, Jia, Xu, & Carroll, 2015). Fujioka and Austin (2003) explained that active mediation was built upon conversations and critical discussions between parents and children, which have helped children become critical thinkers and educated media consumers. Thus, the effectiveness of active mediation is greater than the other parental mediation strategies. In addition, some studies indicated that restrictive mediation was the most effective in decreasing the amount of time children spent with media and limiting their exposure to inappropriate media content (Baya, Mberia, & Bosire, 2015; Livingstone & Helsper, 2008). Furthermore, Collier et al. (2016) conducted a meta-analytic study of parental mediation and concluded that active mediation was more effective in mitigating television-induced aggression, whereas restrictive mediation worked better in decreasing the amount of time spent with media and media-induced unhealthy behaviors.

While many studies have compared the effectiveness of different parental mediation strategies in reducing children's media-related risks, these studies only focused on the active mediation and restrictive mediation of television and Internet. The effectiveness of new parental mediation strategies – authoritarian surveillance and monitoring in the context of social media have yet to be examined and compared. Furthermore, no study to date has examined the comparative effectiveness of different parental mediation strategies in reducing cyberbullying. Thus, in order to provide valuable information to parents and to contribute to the parental mediation and cyberbullying literature, it is necessary to explore and determine the relative effectiveness of each mediation strategy in preventing cyberbullying perpetration and victimization. Based on the above considerations, this study develops the following hypotheses and research questions:

H5: Parental mediation strategies – (a) active mediation, (b) restrictive mediation, (c) authoritarian surveillance, and (d) monitoring – are negatively associated with cyberbullying perpetration on social media.

H6: Parental mediation strategies – (a) active mediation, (b) restrictive mediation, (c) authoritarian surveillance, and (d) monitoring – are negatively associated with cyberbullying victimization on social media.

RQ1: What is the comparative effectiveness of the four parental mediation strategies –(a) active mediation, (b) restrictive mediation, (c) authoritarian surveillance, and (d) monitoring – in reducing cyberbullying perpetration?

RQ2: What is the comparative effectiveness of the four parental mediation strategies –(a) active mediation, (b) restrictive mediation, (c) authoritarian surveillance, and (d) monitoring – in reducing cyberbullying victimization?

4.3 Third-person Perception

Many scholars have attempted to explore the third-person perception concerning cyberbullying (Byrne et al., 2014; Chapin, 2014). They found that individuals tend to perceive that others are more vulnerable to cyberbullying than themselves. Moreover, some studies have indicated that this perceptual bias could lead to an underestimation of online risks, increase social media use as well as exposure to online risks (Byrne et al., 2014; Chapin, 2014; Lev-On, 2016). In other words, the third-person perception can be a critical factor contributing towards experiencing online risks. Hence, this study seeks to examine the third-person effect in the context of cyberbullying.

The third-person effect, first articulated by Davison (1983), posits that individuals perceive that the media wields greater negative influence on other people than on themselves, based on their personal biases. According to Davison (1983) and Gunther (1995), the third-person effect comprises of two components: perceptual and behavioral components. The perceptual component is termed as the third-person

perception, which specifies that individuals tend to consider themselves as smarter than others, thus presuming themselves as less susceptible to the effects of media. Moreover, people with the third-person perception may perform certain attitudinal or behavioral actions; that is, the behavioral component (Davison, 1983; Perloff, 1999). Many studies on the third-person perception have indicated that perceptions of greater negative media effects on others often make people more willing to support regulation of media content or use (e.g., Gunther & Ang, 1996; Gunther & Storey 2003; Ho, Detenber, Malik, & Neo, 2012).

However, the behavioral component is not limited to support for censorship. The focal point in the behavioral component of the third-person effect is attitudinal and behavioral outcomes. Aside from support for media censorship, the third-person perception of social media has been found to lead to several risky behaviors on social media (Mani, Heravi, Mubarak & Choo, 2015).

Specifically, individuals with a high level of third-person perception tend to perceive that they are smarter and have higher power than others on social media. They might victimize others on social media in order to maintain their sense of superiority on social media (Hawker & Boulton, 2011). Moreover, they desire others to share and confirm their intelligence on social media. Upon being questioned or undermined social media, they may turn aggressive in response. Besides, individuals who perceive that they are less vulnerable than others on social media may not be aware of or concerned about engaging in potentially risky behaviors on social media (Byrne, Katz, Lee, Linz, & McIlrath, 2014). In other words, individuals with a high level of third-person perception might engage in risky behaviors on social media, and thus be more likely to be cyberbullied (Kwan & Skoric, 2012). Indeed, Chapin (2014) found that those who expected others to be more vulnerable than themselves on Facebook were more likely to experience cyberbullying. Therefore, it is expected that individuals with a high level of third-person perception about social media tend to engage in both cyberbullying perpetration and victimization on social media.

Additionally, the third-person perception could affect children's acceptance of parents' mediation messages, which in turn determines the effectiveness of parental mediation. Specifically, individuals who perceive that they are less at risk or smarter than others on social media tend not to accept parental guidance regarding social media use because they believe that they have more skills in using social media in an appropriate way to protecting themselves from risks on social media than others, even their parents. In other words, individuals with a high level of third-person perception tend to pursue independence in social media use and have more reservations about particular parental interventions. Thus, they are less likely to accept parental advice; that is, they do not allow the advice to guide their behaviors on social media. Furthermore, according to family communication theories, Grusec and Goodnow (1994) indicated that acceptability is a mechanism underlying the effectiveness of parental mediation. If children are willing to accept and comply with the parental message, parental mediation would be more effective (Fujioka & Austin, 2002; Grusec & Goodnow, 1994). Based on these considerations, children's third-person perceptions of social media could determine the effectiveness of parental mediation in preventing cyberbullying perpetration and victimization on social media. Moreover, various parental mediation strategies are less effective when children perceive that they are less vulnerable than others on social media. Based on this reasoning, this study puts forth the following hypotheses:

H7: Third-person perception is positively associated with cyberbullying perpetration on social media.

H8: Third-person perception is positively associated with cyberbullying victimization on social media.

H9: The effectiveness of the four different parental mediation strategies – (a) active mediation, (b) restrictive mediation, (c) authoritarian surveillance, and (d) monitoring – in reducing cyberbullying perpetration on social media is greater when children's third-person perception is low as compared to when it is high.

H10: The effectiveness of the four different parental mediation strategies – (a) active mediation, (b) restrictive mediation, (c) authoritarian surveillance, and (d) monitoring – in reducing cyberbullying victimization on social media is greater when children’s third-person perception is low as compared to when it is high.

4.4 Parent-child Agreement in Reporting Parental Mediation

The substantial disagreement between parent and child in reports of parental interactions has been elucidated in many studies (Fujioka & Austin, 2002; Nathanson, 2001; Rossiter & Robertson, 1975). According to family communication theories, this disagreement is due to parent-child perceptual differences (Austin, 1992; Ritchie & Fitzpatrick, 1990). Accordingly, Ritchie and Fitzpatrick (1990) argued that parent-child agreement or disagreement in reporting family communication could be an indicator of actual perceptual differences between children and parents. A high degree of agreement between children and parents’ perceptions of family interactions indicates a higher level of mutual understanding (Buijzen, Rozendaal, Mooman, & Tanis, 2008). However, Rossiter and Robertson (1975) suggested that parents usually report more parent-child interactions than do children. In other words, children are usually not aware of parents’ actual behaviors, which may affect the effectiveness of parenting practices.

Specifically, some studies have indicated that high congruent reports of parenting practices between children and parents can be seen as reflecting a positive family environment, which improves parent-child interactions and communication (Tein, Roose, Michaels, 1994; Deal, Halverson, & Wampler, 1994). In a family with an effective parent-child communication, children are more likely to do what parents told to them as these children are usually more aware of what their parents’ messages signify and what to expect from their parents (Zolten & Long, 2006). Thus, parenting practices tend to be more effective. Besides, Grusec and Goodnow (1994) have also indicated that the effectiveness of parental mediation was based on children’s accurate

understanding of parental mediation messages. Moreover, parental mediation was more effective if children were more aware of parental mediation messages (Fujioka & Austin, 2003). In other words, a high consistency or agreement between parent and child's reports of parental mediation could improve the parental mediation effectiveness. Furthermore, Buijzen, Rozendaal, Mooman, and Tanis (2008) explored the moderating influence of parent-child agreement in the relationship between parental advertising mediation and children's advertising-induced materialistic attitudes. They found that parental mediation was more effective in reducing children's advertising-induced materialistic attitudes when children accurately perceived their parents' mediation activities. Therefore, it is expected that the effectiveness of parental mediation of social media in cyberbullying prevention could be contingent on parent-child agreement. Moreover, parental mediation strategies will be more effective when parent-child agreement in reporting mediation is high; that is, when children accurately understand what their parents' mediation messages signify. Therefore, this study advances the following hypotheses:

H11: Parents are more likely to report higher levels of parental mediation strategies – (a) active mediation, (b) restrictive mediation, (c) authoritarian surveillance, and (d) monitoring – than do children.

H12: The effectiveness of the four different parental mediation strategies – (a) active mediation, (b) restrictive mediation, (c) authoritarian surveillance, and (d) monitoring – in reducing cyberbullying perpetration on social media is greater when the parent-child agreement in reporting mediation is high as compared to when it is low.

H13: The effectiveness of the four different parental mediation strategies – (a) active mediation, (b) restrictive mediation, (c) authoritarian surveillance, and (d) monitoring – in reducing cyberbullying victimization on social media is greater when the parent-child agreement in reporting mediation is high as compared to when it is low.

4.5 Children versus Adolescents

The importance of parents in socializing their children generally decreases as the child's age increases (Maccoby, 2007). Parents are the main agent of socialization for young children (Caruana & Vassallo, 2003; Maccoby, 1992). Young children's learning and development mainly depend upon parental guidance. However, when individuals enter adolescence, they tend to spend more time with external socialization agents, such as teachers and peers, and less time with their parents (Bukowski, Brendgen, & Vitaro, 2007). Moreover, in this developmental stage, they tend to pursue autonomy and independence (Blos, 1979). As such, adolescents' cognitions and behaviors are influenced more by external socialization agents and their personal values and beliefs than by their parents.

Additionally, it has been found that children and adolescents generally have differing reactions to parental mediation. Specifically, young children tend to obey parents' instructions, whereas adolescents tend to resist parental authority, especially when parents made various strict restrictions on their media use. Many studies have suggested that the effectiveness of parental mediation is weaker in adolescents than in younger children (e.g., Nathanson, 2002; Nikken & Jansz, 2011; Parkes et al. 2013). In other words, parental mediation could be more effective for children than adolescents.

In spite of this, different parental mediation strategies work differently for children and adolescents. Specifically, Lwin et al. (2008) found that although active mediation and restrictive mediation strategies were effective in reducing risky online behaviors for both younger and older children, restrictive mediation strategy was only somewhat effective for younger children, but not older children. According to the reactance theory, the prohibitive features of restrictive parental mediation might threaten children's freedom. As such, older children who pursue autonomy and independence tend to show reactance and less compliance to their parents. In addition, Rasmussen (2013) argued that active mediation was more effective for adolescents than children, due to adolescents' higher cognitive capacities. Nathanson (2004)

indicated that adolescents could benefit more from active mediation than children because it is difficult for young children to think about and store active mediation messages while using media. This subsequently exhausts their cognitive resources, making them unable to benefit from active mediation. Based on the above considerations, it is worthwhile to compare the influences of parental mediation strategies on cyberbullying between children and adolescents. However, it cannot be simply hypothesized that the four different parental mediation strategies are more effective for children than adolescents due to mixed results. Thus, this study develops the following research questions:

RQ3: How does the effectiveness of the four parental mediation strategies - (a) active mediation, (b) restrictive mediation, (c) authoritarian surveillance, and (d) monitoring in reducing cyberbullying perpetration on social media compare between children and adolescents?

RQ4: How does the effectiveness of the four parental mediation strategies - (a) active mediation, (b) restrictive mediation, (c) authoritarian surveillance, and (d) monitoring in reducing cyberbullying perpetration on social media compare between children and adolescents?

Figure 4.1. The hypothesized model.

4.6 Method

4.6.1 Sample and Procedure

This study conducted a self-administered paper-and-pencil survey in four primary schools and four secondary schools in Singapore from June to December 2015. Upon receiving approval from the NTU Institutional Review Board (IRB) and the Ministry of Education (MOE), upper primary school students (i.e., Primary 4 to 6 students), secondary 1 to 5 school students, and their parents were recruited to participate in the study. This study used multi-stage cluster sampling to randomly select four primary schools (one school from each of the North, South, East, and West regions officially designated by the Singapore government) and four secondary schools (one school from each of the North, South, East, and West regions officially designated by the Singapore government) as participating schools. At the first stage, a total of fifteen primary schools (from all regions) and twelve secondary schools (from all regions) were invited to participate in the study, in which four primary and four secondary schools came on board. The response rates of the primary and secondary schools that agreed to participate were 26.7% and 33.3% respectively. This study used

a rigorous parent-child matched sample design, in which the parents who answered the questionnaires were the parents of these students sampled. 1,424 students and 1,206 parents completed the questionnaires, yielding a total sample of 1,023 parent-child dyads. The sample included 389 pairs of upper primary school students and their parents, as well as 634 pairs of secondary school students and their parents. The final response rate of the participants was 51.2% (38.9% for primary school children and parents, 63.4% for secondary school children and parents). The margin of error was approximately +/- 3% at the 95% confidence level.

4.6.2 Measures

Control Variables. Control variables of parent participants in this study included gender (1= male, 2 = female; 47.10% male), age ($M = 45.17$, $SD = 5.24$), and monthly household income ranged from 1 (SGD 1,000 or below) to 6 (above SGD 9,001) ($M = 3.28$, $SD = 1.56$). Control variables of child participants in this study included gender (male = 1, female = 2; 50.5% male), education level ranging from 1 (primary level 4) to 8 (secondary level 5) ($Mdn = 4$ or “secondary level 1”, $SD = 1.78$), race (1 = Chinese, 2= others; 56.60% Chinese), age group (1= primary school students, 2= secondary school students; 38.10% primary school students) and the amount of time (in hours and minutes) spent on social media per day ($M = 3.24$, $SD = 1.8$).

Self-Esteem. Self-esteem was measured using a 10-item scale adopted from Rosenberg’s (1965) self-esteem scale (RSES). Child participants were asked to indicate the extent of their agreement with the following items on a seven-point Likert scale (1 = “strongly disagree”; 7 = “strongly agree”): (a) “On the whole, I am satisfied with myself,” (b) “At times, I think I am no good at all,” (c) “I feel that I have a number of good qualities,” (d) “I am able to do things as well as most other people,” (e) “I feel I do not have much to be proud of,” (f) “I certainly feel useless at times,” (g) “I feel that I’m a person of worth, at least on an equal plane with others,” (h) “I wish I could have more respect for myself”, (i) “All in all, I am inclined to feel that I am a

failure,” and (j) “I take a positive attitude toward myself.” For items (b), (e), (f), (h), and (i), the scores were reversed. Responses were averaged to create a scale with a higher score indicating higher self-esteem ($M = 4.06$; $SD = 1.00$, *Cronbach’s alpha* = .73).

Narcissism. Narcissism was measured using a 12-item scale adopted from Ang and Raine (2008). Child participants were asked to indicate the extent of their agreement with each items on a seven-point Likert scale (1 = “strongly disagree”; 7 = “strongly agree”): (a) “I always know what I am doing,” (b) “I am going to be a great person,” (c) “I was born a good leader,” (d) “I am really a special person,” (e) “I think my body looks good,” (f) “I think I am a great person,” (g) “If I ruled the world it would be a better place,” (h) “I am good at getting people to do things my way,” (i) “It is easy for me to control other people,” (j) “I would do almost anything if you dared me,” (k) “I can make people believe anything I want them to,” and (l) “When I am supposed to be punished, I can usually talk my way out of it.” Responses were averaged to create a scale with a higher score indicating a higher level of narcissism ($M = 3.82$; $SD = 1.21$, *Cronbach’s alpha* = .89).

Parental Mediation Strategies of Social Media. The scale developed and validated in Study 2 were used to measure the four different parental mediation strategies. First, to measure active mediation, child participants were asked: (a) “How frequently do your parents remind you not to give out personal information on social media?” (b) “How frequently do your parents tell you to stop any experience on social media if you feel uncomfortable or scared?” and (c) “How frequently do your parents explain to you about the dangers of social media?” on a seven-point Likert scale. Responses were averaged to create a scale with a higher score indicating a higher level of active mediation ($M = 4.40$; $SD = 1.85$, *Cronbach’s alpha* = .89).

Second, for restrictive mediation, child participants were asked: (a) “How frequently do your parents restrict the type of social media platforms you can visit?” (b) “How frequently do your parents set rules regarding your access to social media,

such as Facebook, Twitter, YouTube, Instagram, WhatsApp, Line, etc?” (c) “How frequently do your parents limit the kind of activities you can do on social media?” (d) “How frequently do your parents restrict the amount of time you can use social media?” and (e) “How frequently do your parents limit you to using social media only for school work?” on a seven-point Likert scale. Responses were averaged to create a scale with a higher score indicating a higher level of restrictive mediation ($M = 3.61$; $SD = 1.75$, *Cronbach's $\alpha = .89$*).

Third, in terms of authoritarian surveillance, child participants were asked: (a) “How much do you agree that your parents ask you to share their social media account(s) and password(s) with them?” (b) “How frequently do your parents log in to your social media account(s) to check your social media friends list?” (c) “How frequently do your parents log in to your social media account(s) to check your conversations with others?” (d) “How frequently do your parents log in to your social media account(s) to check the games you play?” and (e) “How frequently do your parents log in to your social media account(s) to check the pictures you post?” on a seven-point Likert scale. Responses were averaged to create a scale with a higher score indicating a higher level of authoritarian surveillance ($M = 2.66$; $SD = 1.77$, *Cronbach's $\alpha = .90$*).

Finally, to measure monitoring, child participants were asked: (a) “How much do you agree that your parents know your social media account(s)?” (b) “How frequently do you check your social media profile(s)?” and (c) “How frequently do your parents add you as a friend on social media to check what you post on social media?” on a seven-point Likert scale. Responses were averaged to create a scale with a higher score indicating a higher level of monitoring ($M = 3.52$; $SD = 1.93$, *Cronbach's $\alpha = .85$*).

Additionally, parents' perspectives of parental mediation strategies were measured by the parents' version of parental mediation of social media scale which was developed and validated in Study 2. First, to measure active mediation, parent

participants were asked: (a) “How frequently do you remind your child not to give out personal information on social media?” (b) “How frequently do you tell your child to stop any experience on social media if they feel uncomfortable or scared?” and (c) “How frequently do you explain to your child about the dangers of social media?” on a seven-point Likert scale. Responses were averaged to create a scale with a higher score indicating a higher level of active mediation that parents perceived ($M = 4.95$; $SD = 1.59$, *Cronbach’s alpha* = .90).

For restrictive mediation, parent participants were asked: (a) “How frequently do you restrict the type of social media platforms your child can visit?” (b) “How frequently do you set rules regarding your child’s access to social media, such as Facebook, Twitter, YouTube, Instagram, WhatsApp, Line, etc?” (c) “How frequently do you limit the kind of activities your child can do on social media?” (d) “How frequently do you restrict the amount of time your child can use social media?” (e) “How frequently do you limit your child to using social media only for school work?” on a seven-point Likert scale. Responses were averaged to create a scale with a higher score indicating a higher level of restrictive mediation that parents perceived ($M = 4.41$; $SD = 1.71$, *Cronbach’s alpha* = .92).

To assess authoritarian surveillance, parent participants were asked: (a) “How much do you agree that you ask your child to share their social media account(s) and password(s) with you?” (b) “How frequently do you log in to your child’s social media account(s) to check their social media friends list?” (c) “How frequently do you log in to your child’s account(s) to check their conversations with others?” (d) “How frequently do you log in to your child’s social media account(s) to check the games they play?” (e) “How frequently do you log in to your child’s social media account(s) to check the pictures they post?” on a seven-point Likert scale. Responses were averaged to create a scale with a higher score indicating a higher level of authoritarian surveillance that parents perceived ($M = 3.16$; $SD = 1.97$, *Cronbach’s alpha* = .97).

In terms of monitoring, parent participants were asked: (a) “How much do you agree that you know your child’s social media account(s)?” (b) “How frequently do your parents check your child’s social media profile(s)?” (c) “How frequently do you add your child as a friend on social media to check what they post on social media?” on a seven-point Likert scale. Responses were averaged to create a scale with a higher score indicating a higher level of monitoring surveillance that parents perceived ($M = 3.90$; $SD = 2.02$, *Cronbach's alpha* = .90).

Third-person Perception. Third-person perception was measured by one item adopted from Byrne et al (2014). Child participants were asked to rate the extent to which they agreed with the statement on a seven-point Likert scale (1 = “strongly disagree”; 7 = “strongly agree”): I am smarter than most others on social media.” on a seven-point Likert scale. A higher score obtained indicates a higher level of third-person perception ($M = 3.85$; $SD = 2.02$).

Parent-child Agreement in Reporting Parental Mediation. The measure for parent-child agreement in reporting parental mediation was adopted from Buijzen, Rozendaal, Moorman, and Tanis (2008). Specifically, children’s and parents’ perspectives of parental mediation strategies were first measured using the parental mediation scales developed and validated in Study 2. As shown above, the reliabilities of the four different parental mediation strategies reported by both parents and children were satisfactory. Next, the disagreement in reports of each mediation strategy between child and parent was computed by subtracting child scores from parent scores in each mediation strategy, and by computing the absolute values of these scores. After that, the disagreement measures were reversed by subtracting all scores from the maximum value, resulting in a measure for parent-child agreement in active mediation (range 0 – 6.00, $M = 4.63$; $SD = 1.25$), restrictive mediation (range 0 – 6.00, $M = 4.56$; $SD = 1.24$), authoritarian surveillance (range 0 – 6.00, $M = 4.66$; $SD = 1.37$), and monitoring (range 0 – 6.00, $M = 4.42$; $SD = 1.41$).

Cyberbullying Perpetration. Children's report of cyberbullying perpetration was measured using a 3-item scale adopted from Ybarra, Espelage and Mitchell (2007). Child participants were asked to rate their frequency with each item on a seven-point Likert scale (1 = "not at all"; 7 = "very frequently"): (a) "Made rude or mean comments to someone on social media in the last 12 months," (b) "Spread rumours about someone on social media, whether they were true or not in the last 12 months," and (c) "Made aggressive or threatening comments to someone on social media in the last 12 months." Responses were averaged to create a scale with a higher score indicating a higher level of cyberbullying perpetration ($M = 1.85$; $SD = 1.23$, *Cronbach's alpha* = .73).

Parents' report of cyberbullying perpetration was also measured using a 3-item scale adopted from Ybarra et al. (2007). Parent participants were asked to indicate how frequently their child did the following things in the last 12 months (1 = "not at all"; 7 = "very frequently"): (a) "Made rude or mean comments to someone on social media," (b) "Spread rumours about someone on social media, whether they were true or not," and (c) "Made aggressive or threatening comments to someone on social media." Responses were averaged to create a scale with a higher score indicating a higher level of cyberbullying perpetration that parent perceived ($M = 1.86$; $SD = 1.15$, *Cronbach's alpha* = .71).

Cyberbullying Victimization. Children's report of cyberbullying victimization was measured using a 3-item scale adopted from Ybarra et al. (2007). Child participants were asked to rate their frequency with each item on a seven-point Likert scale (1 = "not at all"; 7 = "very frequently"): (a) "Someone made rude or mean comments to you on social media in the last 12 months," (b) "Someone spread rumors about you on social media, whether they are true or not in the last 12 months," and (c) "Someone make aggressive or threatening comments to you on social media in the last 12 months." Responses were averaged to create a scale with a higher score indicating a

higher level of cyberbullying victimization ($M = 2.09$; $SD = 1.53$, *Cronbach's alpha* = .89).

Parents' report of cyberbullying victimization was also measured using a 3-item scale adopted from Ybarra et al. (2007). Parent participants were asked to indicate how frequently their child experienced the following things in the last 12 months (1 = "not at all"; 7 = "very frequently"): (a) "Received rude or mean comments on social media," (b) "Someone spread rumours about him/her on social media, whether they are true or not," and (c) "Received aggressive or threatening comments on social media." Responses were averaged to create a scale with a higher score indicating a higher level of cyberbullying victimization that parents perceived ($M = 1.79$; $SD = 1.23$, *Cronbach's alpha* = .90).

4.6.3 Analysis

The ordinary least squares (OLS) hierarchical regression analysis was used to address the proposed hypotheses and research questions (Cohen & Cohen, 1983). A total of two regression models were performed to examine children's reports of cyberbullying perpetration and victimization respectively. The variables were entered into the regression models according to their assumed casual order as follows:

- 1) Control variables (parent's gender, parent's age, monthly household income, child's gender, child's education level, child's race, child's age group, and child's social media use time)
- 2) Personality traits (self-esteem and narcissism)
- 3) Children's report of parental mediation strategies (active mediation, restrictive mediation, authoritarian surveillance, and monitoring)
- 4) Parent-child agreement (agreement in active mediation, agreement in restrictive mediation, agreement in authoritarian surveillance, and agreement in monitoring)
- 5) Third-person perception

6) Interactions (twelve two-way interactions)

The interactions were created by multiplying standardized versions of the main effect variables to avoid multicollinearity between interaction terms and their components (Cohen & Cohen, 1983). Simple slope analyses were conducted using the SPSS PROCESS macro (Hayes, 2013). Based on the pick-a-point method, conditional effects at different categories for nominal variables and at plus and minus one standard deviation around the mean for continuous variables were estimated.

4.7 Results

4.7.1 Prevalence of Cyberbullying on Social Media

First, cyberbullying was very common on social media with 49.30% of child participants ($n = 1,023$) reported having engaged in at least one form of cyberbullying perpetration on social media and 55.60% of child participants ($n = 1,023$) reported having experienced at least one form of cyberbullying victimization in the last 12 months. Despite this, these participants reported a low frequency of engaging in both cyberbullying perpetration and victimization with an average score of 1.85 and 2.09 on a seven-point scale respectively.

In addition, 49.10% of the parent participants ($n = 1,023$) reported that their children have cyberbullied others; whereas 47.60% of the parent participants ($n = 1,023$) perceived that their children have been victims of cyberbullying in the past 12 months. Paired sample t-tests were conducted to reveal that parent and child reports of children's cyberbullying perpetration were not significantly different $t(1022) = .28, p = .78$. However, parent participants reported a significantly lower level of children's cyberbullying victimization than what was reported by child participants, $t(1022) = -6.46, p < .001$.

4.7.2 Predicting Cyberbullying Perpetration

The first regression model explored factors predicting cyberbullying perpetration. Overall, our model explained cyberbullying perpetration well, accounting for a total of 31.60% of the variance in the dependent variable (see Table 4.1).

Control Variables. The control variables in the first block explained 16.10% of the variance in cyberbullying perpetration on social media. Specifically, monthly household income ($\beta = -.15, p < .001$), and child's education level ($\beta = -.26, p < .001$) were negatively associated with cyberbullying perpetration on social media. In contrast, child's age group ($\beta = .13, p < .01$) and child's social media use time ($\beta = .16, p < .001$) was positively associated with cyberbullying perpetration on social media.

Personality Traits. The results indicated that those who reported high self-esteem were less likely to cyberbully others on social media than those with low self-esteem ($\beta = -.21, p < .001$), lending support to H1. However, narcissism was not significantly associated with cyberbullying perpetration on social media, failing to support H3. These two personality traits explained 5.20% of the variance in the dependent variable.

Parental Mediation. The results demonstrated that active mediation ($\beta = -.16, p < .001$) and monitoring ($\beta = -.13, p < .001$) were negatively associated with cyberbullying perpetration on social media, which support H5a and H5d. On the contrary, authoritarian surveillance ($\beta = .14, p < .001$) was positively associated with cyberbullying perpetration on social media. Restrictive mediation had no significant association with cyberbullying perpetration on social media. Thus, H5d and H5c were not supported. Besides, to address RQ1, the effectiveness of these four parental mediation strategies was compared based on their standardized beta values. The results demonstrated that two mediation strategies significantly reduced cyberbullying perpetration, in which active mediation ($\beta = -.16, p < .001$) was a more effective strategy than monitoring ($\beta = -.13, p < .001$). The parental mediation block explained 6.10% of the variance in cyberbullying perpetration on social media.

Third-person Perception. The results showed that individuals with a high level of third-person perception tended to cyberbully others on social media than those with a low level of third-person perception ($\beta = .11, p < .001$), which supported H7. This variable explained 1.00% of the variance in cyberbullying perpetration on social media.

Table 4.1 OLS hierarchical regression analysis predicting cyberbullying perpetration.

	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>	<i>Model 5</i>
<i>Block 1: Control variables</i>					
Parent's gender (1= male, 2=female)	-.11***	-.12***	-.13***	-.13***	-.13***
Parent's age	.02	.04	.04	.04	.04
Family Income	-.20***	-.17***	-.15***	-.14***	-.14***
Child's gender (1= male, 2= female)	-.04	-.05	-.04	-.04	-.04
Child's race (1= Chinese, 2= others)	-.01	-.04	-.03	-.03	-.04
Child's education level	-.32***	-.28***	-.27***	-.27***	-.26***
Child's age (1= primary school students, 2= secondary school students)	.19***	.15***	.16***	.16***	.13***
Child's social media use time	.20***	.18***	.17***	.17***	.16***
Incremental R^2 (%)	16.10				
<i>Block 2: Personalities</i>					
Self-esteem		-.25***	-.19***	-.19***	-.21***
Narcissism		.05	.04	.03	.02
Incremental R^2 (%)		5.20			
<i>Block 3: Parental mediation</i>					
Active Mediation (AM)			-.19***	-.17***	-.16***
Restrictive mediation (RM)			-.01	-.03	-.02
Authoritarian surveillance (AS)			.13***	.13***	.14***
Monitoring (MO)			-.14***	-.14***	-.13***
Incremental R^2 (%)			6.10		
<i>Block 4: Third-person perception</i>					
Third-person perception (TPP)				.11***	.11***
Incremental R^2 (%)				1.00	
<i>Block 5: Parent-child agreement</i>					
Agreement in AM					-.04
Agreement in RM					-.00
Agreement in AS					-.01
Agreement in MO					-.05
Incremental R^2 (%)					0.50
<i>Block 6: Interactions</i>					

TPP×AM	.07*
TPP×RM	.09**
TPP×AS	-.00
TPP×MO	.06*
Agreement in AM ×AM	-.10**
Agreement in RM ×RM	.01
Agreement in AS ×AS	.02
Agreement in MO ×MO	-.01
Age×AM	.13**
Age×RM	.18***
Age×AS	.05
Age×MO	.13**
Incremental R^2 (%)	2.80
Total R^2 (%)	31.60

Note. $N=1,023$. Cell entries for all models are final standardized regression coefficients for Blocks 1, 2, 3, 4, and 5 before-entry standardized regression coefficient for Block 6. * $p < .05$. ** $p < .01$, *** $p < .001$.

Interactions. First, all the interaction terms explained 2.80% of the variance in cyberbullying perpetration on social media. H9 stated that the strength of the negative relationship between parental mediation and cyberbullying perpetration on social media is greater when children has a low level of third-person perception. To address this hypothesis, the interaction results showed that the third-person perception significantly moderated the associations between cyberbullying perpetration on social media and the three parental mediation strategies – active mediation ($\beta = .07$, $p < .001$), restrictive mediation ($\beta = .09$, $p < .001$), and monitoring ($\beta = .06$, $p < .001$). Moreover, according to Figure 4.2, active mediation and monitoring were more effective in reducing cyberbullying perpetration on social media if child participants reported a low level of third-person perception. Based on the non-significant main effect of restrictive mediation and its interaction with third-person perception (as shown in Figure 4.2), restrictive mediation had a negative effect on cyberbullying perpetration only when children have a low level of third-person perception. Furthermore, simple slope analyses also showed that the negative effect of active

mediation on cyberbullying perpetration on social media was greater when third-person perception was low ($\beta = -.32, p < .001$) than moderate ($\beta = -.25, p < .001$) and high ($\beta = -.17, p < .001$). For restrictive mediation, it had a significant effect on cyberbullying perpetration when third-person perception was low ($\beta = -.24, p < .001$) and moderate ($\beta = -.13, p = .82$), but not high ($\beta = -.02, p = .58$). Besides, the effect of monitoring was significant when third-person perception was low ($\beta = -.27, p < .001$) and moderate ($\beta = -.19, p < .001$), but not high ($\beta = -.08, p = .12$). Thus, the results supported H9a, H9b, and H9d. However, the results revealed that third-person perception did not significantly moderate the effect of authoritarian surveillance on cyberbullying perpetration on social media, failing to support H9c (see Figure 4.2).

Note. The scale ranges on the y-axis are partially shown in this figure.

Figure 4.2. Parental mediation, third-person perception (TPP), and cyberbullying perpetration.

With regard to the parent-child agreement in reporting mediation, paired t-tests were first conducted to compare between children's and parent's perspectives of parental mediation strategies. The results showed that parents' reports of active mediation $t(1022) = 10.15, p < .001$, restrictive mediation $t(1022) = 15.03, p < .001$, authoritarian surveillance $t(1022) = 8.68, p < .001$, and monitoring $t(1022) = 5.77, p < .001$ were all significantly higher than those reported by children, which supported H11a, H11b, H11c and H11d.

Furthermore, H12 stated that the strength of the negative relationship between parental mediation and cyberbullying perpetration on social media would be greater when the parent-child agreement in reporting mediation is high. To test this hypothesis, our results demonstrated that agreement in reports of active mediation between parents and children significantly moderated the relationship between active mediation and cyberbullying perpetration on social media ($\beta = -.10, p < .001$). Figure 4.3 showed that the effectiveness of active mediation was stronger due to the high level of parent-child agreement in active mediation. Furthermore, the simple slope test showed that active mediation was more effective when the parent-child agreement was high ($\beta = -.34, p < .001$) than moderate ($\beta = -.26, p < .001$) and low ($\beta = -.17, p < .05$). Based on these results, H12a was supported. However, according to Table 1, agreement in restrictive mediation, authoritarian surveillance, and monitoring did not significantly moderate the associations between the three parental mediation strategies – restrictive mediation, authoritarian surveillance, monitoring and cyberbullying perpetration; thus failing to support H12b, H12c, and H12d (see Figure 4.3).

To address RQ3, the effectiveness of the four different parental mediation strategies in reducing cyberbullying perpetration on social media between children and adolescents were compared. Specifically, the interaction terms between age and parental mediation strategies active mediation ($\beta = .13, p < .001$), restrictive mediation ($\beta = .18, p < .001$), monitoring ($\beta = .13, p < .001$) were significantly associated with cyberbullying perpetration. According to Figure 4.4, the effectiveness of active mediation and monitoring in reducing cyberbullying perpetration on social media were greater for children than for adolescents. Based on the non-significant main effect of restrictive mediation and its interaction with age (as shown in Figure 4.4), restrictive mediation was significantly associated with cyberbullying perpetration on social media among children but not adolescents. Furthermore, simple slope tests revealed that active mediation was more effective for children ($\beta = -.37, p < .001$) than adolescents ($\beta = -.18, p < .001$). The effects of restrictive mediation ($\beta = -.32, p < .001$) was

significant for children, but not adolescents ($\beta = -.01, p = .98$). Likewise, monitoring ($\beta = -.31, p < .001$) was significant for children, but not adolescents ($\beta = -.05, p = .09$). Thus, only active mediation was significantly effective in reducing cyberbullying perpetration for children and adolescents. Moreover, its effectiveness was greater for children than adolescents. However, restrictive mediation and monitoring were only significantly effective for children, but not adolescents. Besides this, the results showed that age was not a significant moderator of authoritarian surveillance and cyberbullying perpetration. In other words, authoritarian surveillance was positively associated with cyberbullying perpetration among both children and adolescents (see Figure 4.4).

Note. The scale ranges on the y-axis are partially shown in this figure

Figure 4.3. Parental mediation, parent-child agreement for cyberbullying perpetration.

Note. The scale ranges on the y-axis are partially shown in this figure

Figure 4.4. Parental mediation, age, and cyberbullying perpetration.

4.7.3 Predicting Cyberbullying Victimization

The second regression model examined factors predicting cyberbullying victimization. Overall, our model explained cyberbullying perpetration well, accounting for a total of 19.50% of the variance in the dependent variable (see Table 4.2).

Control Variables. The control variables explained 4.60% of the variance in cyberbullying perpetration. The results showed that child's education level ($\beta = -.12, p < .001$) was negatively associated with cyberbullying victimization on social media,

whereas child's social media use time ($\beta = .14, p < .001$) was positively associated with cyberbullying victimization on social media.

Personality Traits. The results revealed that those who reported high self-esteem were less likely to be cyberbullied than those with low self-esteem ($\beta = -.17, p < .001$), which supported H2. However, narcissism was not significantly associated with cyberbullying victimization on social media, failing to support H4. The personality traits block explained 3.30% of the variance in the dependent variable.

Parental Mediation. The results showed that active mediation ($\beta = -.08, p < .001$) and restrictive mediation ($\beta = -.13, p < .001$) were negatively related to cyberbullying victimization on social media, lending support to H6a and H6b. In contrast, authoritarian surveillance ($\beta = .19, p < .001$) was positively associated with cyberbullying victimization on social media. However, monitoring had no significant association with cyberbullying victimization on social media, failing to support H6c and H6d. To address RQ2, the effectiveness of these four parental mediation strategies was compared based on their standardized beta values. The results revealed that only two mediation strategies significantly reduced cyberbullying victimization, in which restrictive mediation ($\beta = -.13, p < .001$) was more effective as compared with active mediation ($\beta = -.08, p < .001$). These four parental mediation strategies explained 4.40% of the variance in cyberbullying perpetration.

Third-person Perception. The results demonstrated that third-person perception was not significantly associated with cyberbullying victimization, which failed to support H8. Thus, this block did not significantly explain the variance in cyberbullying victimization.

Table 4.2 OLS hierarchical regression analysis predicting cyberbullying victimization.

	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>	<i>Model 5</i>
<i>Block 1: Control variables</i>					
Parent's gender (1= male, 2= female)	.06	.06	.05	.04	.05
Parent's age	-.05	-.05	-.04	-.03	-.04
Family Income	-.04	-.04	-.01	-.01	-.00
Child's gender (1= male, 2= female)	.01	.01	.00	.01	.01
Child's race (1= Chinese, 2= others)	.07	.07	.05	.05	.05
Child's education level	-.17***	-.17***	-.14**	-.12*	-.12*
Child's age (1= primary school students, 2= secondary school students)	.07*	.04	.08	.08	.07
Child's social media use time	.19***	.19***	.15***	.15***	.14***
Incremental R^2 (%)	4.60				
<i>Block 2: personalities</i>					
Self-esteem		-.20***	-.16***	-.15***	-.17***
Narcissism		.06	.04	.02	.01
Incremental R^2 (%)		3.30			
<i>Block 3: Parental mediation</i>					
Active Mediation (AM)			-.11**	-.09*	-.08*
Restrictive mediation (RM)			-.15***	-.14***	-.13***
Authoritarian surveillance (AS)			.19***	.19***	.19***
Monitoring (MO)			-.07	-.06	-.06
Incremental R^2 (%)			4.40		
<i>Block 4: Third-person Perception</i>					
Third-person perception				.07*	.05
Incremental R^2 (%)				.40	
<i>Block 5: Parent-child agreement</i>					
Agreement in AM					-.05
Agreement in RM					-.08*
Agreement in AS					-.05
Agreement in MO					-.02
Incremental R^2 (%)					2.10
<i>Block 6: Interactions</i>					
TPP×AM					.12***
TPP×RM					.08**
TPP×AS					.06

TPP×MO	.14***
Agreement in AM ×AM	-.15***
Agreement in RM ×RM	-.01
Agreement in AS ×AS	.01
Agreement in MO×MO	-.05
Age×AM	.13**
Age×RM	.20***
Age×AS	.14**
Age×MO	.14**
Incremental R^2 (%)	4.70
Total R^2 (%)	19.50

Note. $N=1,023$. Cell entries for all models are final standardized regression coefficients for Blocks 1, 2, 3, 4, and 5 before-entry standardized regression coefficient for Block 6. * $p < .05$. ** $p < .01$. *** $p < .001$.

Interactions. All the interaction terms explained 4.70% of the variance in cyberbullying perpetration on social media. First, H10 stated that the strength of the negative relationship between parental mediation and cyberbullying victimization on social media would be greater when children has a low level of third-person perception. To address this hypothesis, the moderation results showed that interaction terms between third-person perception and the three parental mediation strategies – active mediation ($\beta = .12, p < .001$), restrictive mediation ($\beta = .08, p < .001$), monitoring ($\beta = .14, p < .001$) were significantly associated with cyberbullying victimization on social media. Moreover, Figure 4.5 showed that the effectiveness of active mediation and restrictive mediation were greater in reducing cyberbullying victimization if child participants reported a low level of third-person perception. Based on the non-significant main effect of monitoring and its interaction with the third-person perception (as shown in Figure 4.5), monitoring was only significantly associated with cyberbullying victimization on social media when children had a low level of third-person perception. Furthermore, simple slope analyses showed that active mediation had a significant effect on cyberbullying victimization when third-person perception was low ($\beta = -.31, p < .001$) and moderate ($\beta = -.18, p < .001$), but

not high ($\beta = .06, p = .08$). Similarly, the effect of restrictive mediation on cyberbullying victimization was significant when third-person perception was low ($\beta = -.26, p < .001$) and moderate ($\beta = -.14, p < .001$), but not high ($\beta = -.02, p = .52$). Besides, monitoring was significantly associated with cyberbullying victimization on social media when third-person perception was low ($\beta = -.26, p < .001$), and moderate ($\beta = -.09, p < .001$), but not high ($\beta = .08, p = .07$). The results supported H10a, H10b, and H10d. However, the results demonstrated that the third-person perception did not significantly moderate the association of authoritarian surveillance with cyberbullying victimization, failing to support H10c (see Figure 4.5).

H13 stated that the strength of the negative relationship between parental mediation and cyberbullying perpetration is greater when parent-child agreement in reporting mediation is high. To examine this hypothesis, the moderation results revealed that parent-child agreement in reporting active mediation significantly moderated the association between active mediation and cyberbullying victimization ($\beta = -.15, p < .001$). According to Figure 4.6, active mediation was more effective in reducing cyberbullying victimization if the child and parent had a high level of agreement in reporting active mediation. Specifically, the simple slope test also suggested that the effect of active mediation was significant when the parent-child agreement was high ($\beta = -.28, p < .001$) and moderate ($\beta = -.16, p < .01$), but not low ($\beta = -.06, p = .15$). These results supported H12a. However, parent-child agreement in reports of other three mediation strategies did not significantly moderate the associations between three parental mediation strategies – restrictive mediation, authoritarian surveillance, monitoring and cyberbullying perpetration, thus failing to support H13b, H13c, and H13d (see Figure 4.6).

Note. The scale ranges on the y-axis are partially shown in this figure

Figure 4.5 Parental mediation, third-person perception (TPP), and cyberbullying victimization.

Note. The scale ranges on the y-axis are partially shown in this figure

Figure 4.6 Parental mediation, third-person perception (TPP), and cyberbullying victimization.

To address RQ4, the effectiveness of the four different parental mediation strategies in reducing cyberbullying victimization between children and adolescents were compared. Specifically, the results showed that age significantly moderated the associations between all parental mediation strategies – active mediation ($\beta = .13, p < .001$), restrictive mediation ($\beta = .20, p < .001$), authoritarian surveillance ($\beta = .14, p < .001$), monitoring ($\beta = .14, p < .001$) and cyberbullying victimization on social media. Figure 4.7 revealed that the negative effects of active mediation and restrictive mediation on cyberbullying were greater for children than adolescents. Moreover, based on the non-significant main effect of monitoring and its interaction with age (as shown in Figure 4.7), monitoring had a significantly negative effect on cyberbullying victimization on social media among children but not adolescents. Besides, the positive effect of authoritarian surveillance on cyberbullying victimization was stronger for adolescents than children. Furthermore, simple slope tests also showed

that to reduce cyberbullying victimization, active mediation was more effective for children ($\beta = -.32, p < .001$) than adolescents ($\beta = -.09, p < .05$). Restrictive mediation had significant effects on cyberbullying victimization among children ($\beta = -.32, p < .001$), but not adolescents ($\beta = -.03, p = .44$). Similarly, monitoring ($\beta = -.28, p < .001$) was significant for children, but not adolescents ($\beta = .01, p = .87$). Thus, active mediation, restrictive mediation, and monitoring were effective in reducing cyberbullying victimization for children, but not adolescents. On the contrary, authoritarian surveillance was positively associated with cyberbullying victimization among both children and adolescents. However, the positive effect of authoritarian surveillance was stronger for adolescents ($\beta = .18, p < .05$) than children ($\beta = .10, p < .05$) (see Figure 4.7).

Note. The scale ranges on the y-axis are partially shown in this figure

Figure 4.7 Parental mediation, age, and cyberbullying victimization

4.8 Discussion

Based on our descriptive results, cyberbullying perpetration and victimization are very common among primary and secondary school students in Singapore. This study not only examined the main effects of self-esteem, narcissism, the third-person perception and four distinct parental mediation strategies on cyberbullying perpetration and victimization on social media, but also assessed potential interactive mechanisms by which the third-person perception, parent-child agreement in reporting parental mediation and children's age affected the effectiveness of parental mediation.

4.8.1 Main Effects

As expected, self-esteem was negatively associated with both cyberbullying perpetration and victimization. The evidence presented above showed that people possessing high self-esteem were less likely to engage in both cyberbullying perpetration and victimization on social media. This is consistent with extant studies (e.g., Brewer & Kerslake, 2015; Perren et al., 2010). First, high self-esteem is beneficial to children's social interactions (Juth, Smyth, & Santuzzi, 2008). Individuals possessing high self-esteem tend to feel optimistic and satisfied with themselves, and do not attempt to surpass or dominate others. In other words, they are not motivated to cyberbully others on social media (Campbell et al., 2002). Thus, high self-esteem is predictive of fewer cyberbullying perpetration behaviors. Besides, Olweus (1994) and Zapf and Einarsen, (2001) indicated that low self-esteem could increase individuals' vulnerability to victimization due to the congruence between low self-esteem and the needs, motives or reactivates of offenders. Moreover, individuals possessing low self-esteem have no ability to resist or deter victimization (Finkelhor & Asdigian, 1996). Thus, people with low self-esteem are more vulnerable to cyberbullying and are more likely to be victims of cyberbullying on social media.

In contrast, narcissism was not significantly associated with both cyberbullying perpetration and victimization. As explained earlier in this chapter, narcissists tend to pursue a high hierarchy or status in their group or community. They might bully others in order to maintain superior social status to others in the real world (Braithwaite et al., 2009). However, unlike traditional bullying that the victims and bystanders are aware of what is happening and who is doing the bullying, cyberbullying may occur anonymously on social media (Mishna, Saini and Solomon, 2009). In other words, the bystanders and even the victims of cyberbullying may not be able to identify the perpetrators. Hence, victimizing others on social media may not serve the function of establishing a high social status in both online and offline worlds. Besides, some

researchers have argued that in order to obtain attention and admiration, narcissists tend to engage in various self-promotional activities (Buffardi & Campbell, 2008; Wang, Jackson, Zhang, & Su, 2012). However, self-promotion is not equivalent to performing risky behaviors on social media. It also includes several prosocial behaviors, such as social support provisions (Carpenter, 2012). Thus, those who engage in self-promotional activities may not be cyberbullied on social media. Based on the above considerations, narcissism would be not related to cyberbullying perpetration and victimization on social media.

Additionally, based on the aforementioned hypotheses, the four different parental mediation strategies would be effective against cyberbullying perpetration and victimization. The findings demonstrated that active mediation was negatively associated with cyberbullying perpetration and victimization on social media; whereas authoritarian surveillance had a positive effect on both cyberbullying perpetration and victimization on social media. Specifically, active mediation can help children understand social media content and risks and become more educated media users (Valkenburg et al. 1999). In other words, children under active mediation are more likely to know how to use social media in an appropriate manner and how to avoid risks in social media (Bauman, 2009; Mesch, 2009). This decreases the risks of cyberbullying perpetration and victimization. However, many parenting studies have indicated that overly strict parenting practices could lead to children's rebellion or resistance to parental authority (Abar, Carter, & Winsler, 2009; Montemayor, 1986). As such, if parents use overly demanding authoritarian surveillance to manage children's social media use, it may backfire and place children at a higher risk of cyberbullying perpetration and victimization on social media (Nathanson, 2002; Roth & Assor, 2010).

In addition, the findings suggested that restrictive mediation was significantly and negatively associated with cyberbullying victimization, but not cyberbullying perpetration. Restrictive mediation typically includes setting rules to restrict the time

that children are allowed to spend on social media, the activities that children can do on social media, and the platforms that children can visit. If children are willing to follow parents' restrictive mediation, they are most likely to internalize parental rules (Roopnarine, Church, & Levy, 1990). Thus, they might perform less risky behaviors on social media, such as sharing personal information or photos, adding strangers as online friends, and accepting an invitation from online friends or strangers to meet in person (Wisniewski, et al., 2015). This could decrease the likelihood of being cyberbullied on social media. However, even though parents use restrictive mediation, they usually do not explicitly set rules regarding cyberbullying. Additionally, parents do not typically request their children not to harm others on social media, as the purpose of mediation is mainly to mitigate the potentially negative media effects on children rather than focusing on the prevention of children's violent behaviors on social media (Aoyama, Utsumi, Hasegawa, 2012). Hence, restrictive mediation may be less able to reduce cyberbullying perpetration on social media. In addition, the results suggested that monitoring was significantly and negatively associated with cyberbullying perpetration, but not cyberbullying victimization. First, parents use monitoring to check children social media profiles or add them as online friends, thereby providing a silent pressure to normalize children's online behaviors (Pew Internet, 2016). Besides, compared with authoritarian surveillance, which enforces strict obedience and seriously invades children's privacy, monitoring mediation is gentler and more respectful of children as parents use monitoring mediation only to check children's open posts, comments and statuses on social media, but not their private conversations and interactions with others on social media. Children who perceive higher respect from their parents that check their social media tend to engage in less anti-social behaviors. As such, children under monitoring are less likely to engage in cyberbullying perpetration (Harakeh, Scholte, De Vries, & Engels, 2005). However, even though children do not engage in anti-social behaviors and victimize others on social media, it cannot be guaranteed that others do not attack or harm them

on social media. Thus, parent's monitoring may not affect children's cyberbullying victimization on social media.

In regards to the third-person perception, this study proposed that the third-person perception would be positively associated with both cyberbullying perpetration and victimization. The results revealed that individuals with a high level of third-person perception were more likely to engage in cyberbullying perpetration. It is possible that if people believe that they are less vulnerable or are smarter than others on social media, they might attempt to maintain their sense of superiority on social media through cyberbullying perpetration. However, based on the findings, the third-person perception was not significantly correlated to cyberbullying victimization. Admittedly, one explanation states that people who believe that they are safer or capable than others on social media may be less aware or concerned about engaging in potentially risky behaviors on social media (Byrne et al., 2014). As such, they are more likely to be cyberbullied. However, Lee (2009) indicated that individuals who perceived more negative influences of media undesirable content on others than themselves may indeed be less influenced by the media. In other words, individuals who perceive that they are less vulnerable and smarter than others on social media may indeed have more actual knowledge about social media risks and are hence more capable in protecting themselves from these risks (Lee, 2009). In this regard, they are less likely to be victims of cyberbullying. Based on these two possibilities, the third-person perception could not be a significant factor of cyberbullying victimization on social media.

4.8.2 Interactions

Although the third-person perception did not have a main effect on cyberbullying victimization, the results showed that third-person perception significantly moderated the associations between the three parental mediation strategies – active mediation, restrictive mediation, and monitoring and cyberbullying

perpetration and victimization on social media. Moreover, these three mediation strategies were more effective in reducing cyberbullying perpetration and victimization on social media when the individual's third-person perception was low. As explained earlier in this chapter, individuals who do not hold the perception that they are less vulnerable and smarter than others on social media are typically more modest and tend to accept parental guidance and instructions. Hence, the effectiveness of parental mediation was greater for individuals with a low level of third-person perception. However, regardless of children's perception on the negative influences of social media on self or others, they tend to resist parental involvement and engage in cyberbullying as perpetrators or victims if their parents had employed extremely demanding and strict mediation strategies to control their social media use. In other words, children under authoritarian surveillance were more likely to engage in both cyberbullying perpetration and victimization on social media. The moderation results suggested that in order to maximize the effectiveness of parental mediation, parents should make efforts to reduce and eliminate their children's third-person perception.

Additionally, parent-child agreement was a significant moderator of active mediation on both cyberbullying perpetration and victimization on social media. It, however, did not moderate the associations between the other three mediation strategies and cyberbullying. It is plausible that the effectiveness of active mediation would only become apparent if the children understand what these mediation messages signify and follow these messages to perform the desired behaviors. However, other three mediation strategies are more straightforward and less dependent on the level of the children's understanding. The moderation results suggested that in order to reach the anticipated outcomes, it is important to ensure that children accurately understand their parents' mediation messages, especially when parents apply active mediation.

Finally, the moderation results demonstrated that age significantly moderated the effects of the three parental mediation strategies – active mediation, restrictive mediation, and monitoring on cyberbullying perpetration and victimization on social

media. These three mediation strategies were more effective for children than adolescents. Furthermore, the results revealed that only active mediation significantly reduced cyberbullying perpetration and victimization for both children and adolescents, while restrictive mediation and monitoring were only effective in reducing cyberbullying for children, but not for adolescents. Thus, parents of adolescents should apply active mediation to prevent cyberbullying. Besides, age also significantly moderated the positive effects of authoritarian surveillance on cyberbullying victimization, but not cyberbullying perpetration. Specifically, the results revealed that the influence of authoritarian surveillance on cyberbullying victimization was significant for both children and adolescents. This influence, however, was greater for adolescents than children. Based on these results, regardless of children and adolescents, both groups are likely to rebel against parental authority if parents use overly demanding mediation strategies to manage their social media. However, adolescents are more likely to resist their parents and perform risky behaviors. Thus, they are at a higher risk of being cyberbullied than children. Based on these considerations, we do not encourage parents to use authoritarian surveillance to manage children's social media use, especially for adolescents.

Taken together, the results of this study made substantial theoretical contributions to parental mediation and cyberbullying. Specifically, this study was the first to explore and compare the effectiveness of the four different parental mediation strategies in reducing risks on social media. Moreover, this study shed light on how the third-person perception, parent-child agreement and children's age group affect the outcomes of the four parental mediation strategies. All of these helped to develop and validate the parental mediation theory. Besides, this study investigated cyberbullying on social media between children and adolescents based on not only parental mediation, but also the third-person perception, and personality traits, thereby making great contributions to the literature on cyberbullying.

Additionally, the findings also offered many practical implications. Specifically, the results suggested that in order to protect children from cyberbullying, parents should use relatively gentler strategies, such as active mediation, restrictive mediation, and monitoring, to manage children's social media use. Moreover, the findings demonstrated that parents and educators should make efforts to reduce children's third-person perception and increase mutual understanding between parents and children. Besides, the results also suggested that in order to prevent cyberbullying on social media, parents should employ different mediation strategies for various age groups of children.

CHAPTER FIVE CONCLUSIONS

This chapter concludes this dissertation with a discussion on the theoretical and practical implications as well as the limitations and recommendations for future research.

5.1 Review of the Dissertation Research

This dissertation conducted a meta-analytic study of cyberbullying to systematically examine predictors of cyberbullying perpetration and victimization from the social cognitive and media effects approach using 81 empirical studies (Study1). The results of Study 1 first identify the key factors of cyberbullying and examine the magnitude of the effects of these factors. In addition, the findings of this study clarify the research gaps and suggest that future studies should examine cyberbullying on social media among people from different age groups and different counties. Moreover, the influences of different parental mediation strategies and positive self-views on cyberbullying on social media should be examined as well. In response to the research gaps, Study 2 addresses the conceptualization and operationalization of parental mediation of social media. Specifically, Study 2 identifies four conceptually distinct parental mediation strategies of social media as well as develops and validates a scale of parental mediation of social media. Following this, based on the parental mediation theory, this dissertation conducted Study 3 which elucidates how these parental mediation strategies affect cyberbullying perpetration and victimization on social media. Moreover, in order to understand for what and to whom the parental mediation strategies are effective, potential interactive mechanisms by which the third-person perception, parent-child agreement in reporting parental mediation and children's age affect the effectiveness of parental mediation were further examined.

In sum, this dissertation not only provided a systematic view on cyberbullying, but also elaborated the influences of different parental mediation strategies on cyberbullying in the context of social media.

5.2 Theoretical Implications

This dissertation has made many theoretical contributions in the fields of cyberbullying, parental mediation, and social media.

First, Study 1 conducts a meta-analysis to provide a comprehensive and exhaustive statistical synthesis and summary of the empirical evidence regarding predictors of cyberbullying perpetration and victimization, which makes a unique contribution to cyberbullying research. Specifically, building on the social cognitive and media effects approach, this study has shown that almost all the factors from media exposure, personal and environmental influences significantly associated with cyberbullying. In other words, this study provides a promising theoretical framework for cyberbullying research, which fills the research gap, with most extant studies on cyberbullying lacking in a theoretical foundation (Tokunaga, 2010). In addition, the findings of this study provide not only an overview of the research on predictors of cyberbullying, but also new knowledge about the magnitude of the effects of these predictors. Besides, the findings also indicate the heterogeneity of effect sizes across different studies, and thereby identify the four moderators: country, sampling, age, and media platforms that account for differences found across studies. All of these addresses the research gaps in the current literature and provide important guidelines for the direction of future research. The findings also serve as a fruitful starting point which led to the exploration of the influences of various parental mediation strategies and positive self-views on cyberbullying on social media between children and adolescents in Asia.

Second, Study 2 elucidates how parents approach their children's social media use. Unlike previous parental mediation research which focused on the mediation

strategies adopted by parents to manage their children's television viewing and Internet use, this study explores the conceptual categorization of parental mediation strategies of social media, which describes the strategies used by parents to guide or control children's behaviors on social media. According to the findings, four conceptually distinct mediation strategies – active mediation, restrictive mediation, authoritarian and monitoring are used. While the first two mediation strategies are similar to the mediation strategies used in children's television viewing and Internet use, the latter categories are new in the social media context. As such, this study not only develops parental mediation theory with new conceptual categories, but also extend the applicability of parental mediation theory in the context of social media.

Furthermore, this study addresses the operationalization of parental mediation of social media by developing the first theory-derived, successively validated and reliable scale. While some of items for active and restrictive mediation are modified from the previous parental mediation scale of Internet use, the new scale has developed many new items to measure four categories of parental mediation of social media. In other words, this study operationalizes the parental mediation theory in the context of social media. As such, a number of applications of the scale become possible. For example, this scale can be used to examine the association of parents' social media use with parental mediation strategies, as well as the effectiveness of parental mediation strategies in reducing risks on social media. Thus, it would be valuable to researchers interested in this area of research.

Finally, Study 3 provides insights on the influences of parental mediation strategies on cyberbullying on social media. Specifically, this may be considered to be a pioneer study which explores and compares the effectiveness of parental mediation strategies of social media, especially in cyberbullying prevention. Furthermore, while many scholars proposed that parental mediation outcomes could be dependent on children's acceptance and understanding of parental mediation messages and their age ((Buijzen, Rozendaal, Moorman, & Tanis, 2008; Fujioka & Austin, 2003; Grusec &

Goodnow, 1994; Lwin, Stanaland, & Miyazaki, 2008), this study is the first attempt to test this claim by demonstrating the moderating influences of third-person perception, parent-child agreement, and age groups on the effectiveness of parental mediation. Hence, the findings from this study elucidate not only how different parental mediation strategies affect cyberbullying, but also for what and to whom parental mediation strategies are more effective, thereby allowing for a deeper and more refined understanding of the parental mediation theory and cyberbullying.

In addition, this study marks one of the first attempts to explore and compare the influence of two different positive self-views – self-esteem and narcissism on cyberbullying. According to the findings, both cyberbullying perpetration and victimization are significantly influenced by self-esteem, but not narcissism. In other words, only a balanced view of the self rather than an unrealistic self-views could affect cyberbullying. Thus, the findings shed light on whether and when a favorable view of self contributes to involvement in cyberbullying. As such, this increases the understanding of cyberbullying from the psychological perspective. Besides, unlike previous research on the third-person effect that explores the association between the third-person perception and support for media censorship, this study explores the influence of third-person perception on other behavioral outcomes: cyberbullying perpetration and victimization, which extends the third-person effect theory in the context of cyberbullying.

Taken together, this dissertation first provides a map of extant research in the field of cyberbullying as well as identifies the need to provide greater insight into the complexity of cyberbullying and the social nature of involvement in cyberbullying, thereby providing a more comprehensive understanding of cyberbullying. Based on the map, this dissertation seeks to investigate the influence of parental mediation strategies and personality traits on cyberbullying on social media. Before this investigation, the conceptualization and operationalization of parental mediation strategies of social media are addressed. It not only provides parental mediation with a new categorization

in the context of social media, but also develops a successive validated and reliable scale for parental mediation of social media, which can serve as a stepping stone for researchers interested in this area of research. Following this, this dissertation sheds light on how parental mediation strategies and personality traits reflecting positive self-views on cyberbullying on social media. Specifically, it examines and compares the main effects of different parental mediation strategies and personality traits on cyberbullying on social media. Moreover, the potential interactive mechanisms by which the third-person perception, parent-child agreement in reporting parental mediation and children's age affect the effectiveness of parental mediation were elucidated as well. All of these contribute toward a deeper understanding of the parental mediation and cyberbullying.

5.3 Practical Implications

Apart from the theoretical implications, this dissertation also provides many practical implications. First, the findings of Study 1 show that risky ICT use, moral disengagement depression, traditional bullying and social media are more strongly associated with cyberbullying than other factors. All of these could help educators develop effective interventions on cyberbullying. For example, according to the findings, educators could conduct workshops or seminars to guide students on how to use ICT in an appropriate way, to advocate moral engagement, and to correct their misperceptions about the prevalence of cyberbullying in order to protect them from cyberbullying.

In addition, the findings of Study 3 highlight the need for parents to use relatively gentler strategies, such as active mediation, restrictive mediation, and monitoring to manage children's social media use in order to protect them from cyberbullying on social media, as children under authoritarian surveillance tend to resist parental authority and engage in cyberbullying. Moreover, parental mediation is more effective when the third-person perception is low, and when parent-child agreement is high. Thus, parents and educators should make an effort to decrease the

children's third-person perceptions and to increase mutual understanding between parents and their children. Besides, the results demonstrate that parental mediation effectiveness is dependent on children's age group. Thus, in order to reach the anticipated outcomes, parents should use different mediation strategies to protect children and adolescents from cyberbullying on social media.

As a final remark, I believe that the findings of this dissertation make both theoretical and practical contributions to the literature on cyberbullying, parental mediation and social media.

5.3 Limitations and Recommendation for Future Research

This dissertation has several limitations that are important to make explicit. First, I have made much effort to minimize potential social desirability bias. For example, participants of the focus groups and survey participants were reassured that all their responses will be kept confidential and anonymous. Despite this, social desirability bias cannot be fully eliminated. Second, although the meta-analytic study has identified numerous key factors of cyberbullying perpetration and victimization, this dissertation only focused on the influences of parental mediation and two personality traits reflecting positive self-views on cyberbullying on social media. Future studies should examine the associations of other critical factors with cyberbullying on social media, such as risky social media use, self-efficacy, emotional management, and moral disengagement. Third, due to the correlational nature of cross-sectional studies, findings from this dissertation cannot conclude causality between study variables. Future studies should examine such relationships using longitudinal data. Fourth, although culture differences in parental mediation and cyberbullying have been indicated, this dissertation investigates the effectiveness of parental mediation on cyberbullying based only on a Singaporean sample. Future research should replicate these studies in different countries. Fifth, while this dissertation examined parental mediation strategies of social media and their effectiveness on cyberbullying, parents

may use different mediation strategies when children engage in different social media usage behaviors, such as public social media use (i.e., post, like, comment), private social media (i.e., one-to-one messaging), and anonymous social media use. Thus, it is valuable to explore the association between the children's social media usage behaviors and the resulting parental mediation strategy employed. Finally, the current studies investigated the effectiveness of parental mediation strategies in reducing cyberbullying on social media. However, apart from cyberbullying, there are many other kinds of risks on social media. Thus, future research is needed to examine whether and how parental mediation strategies of social media can affect other types of risks on social media.

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APPENDICES

Appendix A: Focus Group Moderator's Guide (Students)

Introduction

Good afternoon/evening and welcome to today's focus group session. My name is _____ from Nanyang Technological University and I would like to find out more about how you use social media. Everything you share with us today will not be shared with anyone else, so please share as much as you want.

Opening/Introductory/Transition Questions

1. Let's go around and introduce one another. Please tell us your name and your hobbies.
2. Do you use social media, such as Twitter, Facebook, Instagram, etc.? What are some of the things you do on social media?

Key Questions

3. What are some things your parents do to manage your social media use?
4. What do you think about risks on social media?
5. What are some things your parents do to protect you from risks on social media (e.g., cyberbullying victimization)?
6. What are some things your parents do to prevent your risky behaviors on social media (e.g. cyberbullying perpetration)?

Ending Questions

7. (*MODERATOR DO NOT READ: Sum up all the main points discussed today before asking the question*) Is there anything else you would like to add to what we have discussed?

Closing Remarks

Thank you. We have come to the end of our focus group session. What you have shared today would really help us understand your social media use. Please go outside and wait for your parents to pick you up. Have a nice day!

Appendix B: Focus Group Moderator's Guide (Parents)

Introduction

Good afternoon/evening. Welcome to today's focus group session. My name is _____ from Nanyang Technological University and we are conducting an academic research project on you and your children's use of social media. Please feel free to share your opinions. Everything you share with us in this session will be kept strictly confidential.

Opening/Introductory/Transition Questions

1. Let's go around and introduce one another. Please tell us your name and how many children you have.
2. Do you use social media, such as Twitter, Facebook, Instagram, etc.? What do you do on social media? What about your children?

Key Questions

3. What are some ways you use to manage your children's social media use?
4. What do you think about risks on social media?
5. What are some ways to prevent your child from risks on social media (e.g., cyberbullying victimization)?
6. What are some ways to prevent your child's risky behaviors on social media (e.g., cyberbullying perpetration)?

Ending Questions

7. (*MODERATOR DO NOT READ: Sum up all the main points discussed today before asking the question*) Is there anything else you would like to add to what we have discussed?

Closing Remarks

Thank you. We have come to the end of today's focus group session. Your inputs have been invaluable and they will be extremely useful in finding more ways to manage children's social media use. Please remember to collect your voucher from our research assistant, who will be waiting for all of you at the exit. Have a nice day!

Appendix C: Student's Questionnaire

Wee Kim Wee School of Communication and Information

SURVEY ON CYBER SAFETY AWARENESS AMONG PRIMARY SCHOOL STUDENTS IN SINGAPORE

We are doing a research study about social media use and cyber safety awareness. Thank you for taking some time to complete this questionnaire. There are no right or wrong answers to the questions, just your opinion.

You do not have to be in this study if you do not want to be. If you decide to stop filling out the questionnaire after you begin, that is fine too. But, we will be happy if you can answer ALL the questions in this questionnaire.

Please raise your hand if you have any questions, and we will come over and help you.

INSTRUCTION: Please circle your responses.

SECTION A

1. Please indicate how much time you spend on social media platforms below. Weekday refers to ONE day from Monday to Friday while weekend refers to either Saturday or Sunday.

A.	How much time do you spend on social media on a typical weekday ?	_____Hours_____Mins
B.	How much time do you spend on social media on a typical weekend ?	_____Hours_____Mins

2. How frequently do your parents do the following for you? (1 = Not at all; 7 = Very frequently)

		Not at all				Very frequently		
A.	Tell you about the information you can disclose on social media?	1	2	3	4	5	6	7
B.	Remind you not to give out personal information on social media?	1	2	3	4	5	6	7
C.	Tell you to stop any experience on social media if you feel uncomfortable or scared?	1	2	3	4	5	6	7
D.	Explain to you about the dangers of social media?	1	2	3	4	5	6	7

3. How frequently do your parents do the following for you? (1 = Not at all; 7 = Very frequently)

		Not at all				Very frequently		
A.	Restrict the type of social media platforms you can visit?	1	2	3	4	5	6	7
B.	Set rules regarding your access to social media, such as Facebook, Twitter, YouTube, Instagram, WhatsApp, Line, etc?	1	2	3	4	5	6	7
C.	Limit the kind of activities you can do on social media?	1	2	3	4	5	6	7
D.	Restrict the amount of time you can use social media?	1	2	3	4	5	6	7
E.	Limit you to using social media only for school work?	1	2	3	4	5	6	7

4. How frequently do your parents do the following for you? (1 = Not at all; 7 = Very frequently)

	Not at all			Very frequently			
A. Log in to check your social media friends list.	1	2	3	4	5	6	7
B. Log in to check your conversations with others.	1	2	3	4	5	6	7
C. Log in to check the games you play.	1	2	3	4	5	6	7
D. Log in to check the pictures you post.	1	2	3	4	5	6	7
E. Check your social media profile(s).	1	2	3	4	5	6	7
F. Check what you post on social media.	1	2	3	4	5	6	7

5. How much do you agree with the following statements? (1= Strongly disagree; 7= Strongly agree)

	Strongly disagree			Strongly agree			
A. Your parents ask you to share your social media account(s) and password(s) with them.	1	2	3	4	5	6	7
B. Your parents know your social media account(s).	1	2	3	4	5	6	7

SECTION B

One concern of cyber safety is cyberbullying, which refers to an aggressive, intentional act carried out by a group or individual, using electronic forms of contact, against a victim who cannot easily defend him or herself.

6. How frequently did you do the following in the last 12 months? (1=Not at all; 7=Very frequently)

	Not at all			Very frequently			
A. Made rude or mean comments to someone on social media.	1	2	3	4	5	6	7
B. Spread rumours about someone on social media, whether they are true or not.	1	2	3	4	5	6	7
C. Made aggressive or threatening comments to someone on social media.	1	2	3	4	5	6	7

7. How frequently did you experience the following in the last 12 months? (1=Not at all; 7=Very frequently)

		Not at all			Very frequently			
A.	Someone made rude or mean comments to you on social media.	1	2	3	4	5	6	7
B.	Someone spread rumours about you on social media, whether they are true or not.	1	2	3	4	5	6	7
C.	Someone made aggressive or threatening comments to you on social media.	1	2	3	4	5	6	7

8. How much do you agree with the following statements? (1= Strongly disagree; 7= Strongly agree)

		Strongly disagree			Strongly agree			
A.	I am smarter than most other children on social media.	1	2	3	4	5	6	7

SECTION C

9. How much do you agree with the following statements? (1= Strongly disagree; 7= Strongly agree)

		Strongly disagree				Strongly agree			
A.	On the whole, I am satisfied with myself.	1	2	3	4	5	6	7	
B.	At times, I think I am no good at all.	1	2	3	4	5	6	7	
C.	I feel that I have a number of good strengths.	1	2	3	4	5	6	7	
D.	I am able to do things as well as most other people.	1	2	3	4	5	6	7	
E.	I feel I do not have much to be proud of.	1	2	3	4	5	6	7	
F.	I certainly feel useless at times.	1	2	3	4	5	6	7	
G.	I feel that I'm a person of worth.	1	2	3	4	5	6	7	
H.	I wish I could have more respect for myself.	1	2	3	4	5	6	7	
I.	All in all, I feel that I am a failure.	1	2	3	4	5	6	7	
J.	I take a positive attitude towards myself.	1	2	3	4	5	6	7	

10. How much do you agree with the following statements? (1= Strongly disagree; 7= Strongly agree)

	Strongly disagree				Strongly agree		
A. I always know what I am doing.	1	2	3	4	5	6	7
B. I am going to be a great person.	1	2	3	4	5	6	7
C. I was born a good leader.	1	2	3	4	5	6	7
D. I am really a special person.	1	2	3	4	5	6	7
E. I think my face or body looks good.	1	2	3	4	5	6	7
F. I think I am a great person.	1	2	3	4	5	6	7
G. If I ruled the world it would be a better place.	1	2	3	4	5	6	7
H. I am good at getting people to do things my way.	1	2	3	4	5	6	7
I. It is easy for me to control other people.	1	2	3	4	5	6	7
J. I would do almost anything if you dared me.	1	2	3	4	5	6	7
K. I can make people believe anything I want them to.	1	2	3	4	5	6	7
L. When I am supposed to be punished, I am usually able to escape the punishment.	1	2	3	4	5	6	7

INSTRUCTION: Please tick your responses.

SECTION D

1. Your gender: ☐ Male ☐ Female
2. Your race: ☐ Chinese ☐ Malay ☐ Indian ☐ Others
3. Your level: ☐ Pri4 ☐ Pri5 ☐ Pri6 ☐ Sec1 ☐ Sec2 ☐ Sec3 ☐ Sec4
☐ Sec5
4. Your age: _____ years old

Thank you very much for participating in our survey. Again, we want to assure you that all the data from this study will be coded and identified only by a subject number. The data will only be used purely for the purposes of completing this project.

Once again, we thank you for participating in this survey.

*****END OF SURVEY*****

Thank you very much for filling out this questionnaire

Appendix D: Parent's Questionnaire

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SURVEY ON CYBER SAFETY AWARENESS AMONG PRIMARY SCHOOL STUDENTS IN SINGAPORE

This study aims to explore parents' social media use and their attitudes toward their children's social media use and cyber safety in Singapore. Thank you for taking some time to complete this questionnaire. There are no right or wrong answers to the questions. Just share your thoughts with us as only your personal responses matter.

Your participation is completely voluntary. Your information will remain strictly confidential and results cannot be linked to individuals in any way—it is purely for the purposes of investigating parents' attitudes toward their children's social media use and cyber safety. We will appreciate if you can answer ALL the questions in this questionnaire.

If you have any concerns about the study, you can contact Mr. Chen Liang by phone at 8338-7893 or by email at ch0087ng@e.ntu.edu.sg.

INSTRUCTION: Please circle your responses unless indicated otherwise.

SECTION A

1. How frequently do you do the following for your child? (1 = Not at all; 7 = Very frequently)

		Not at all				Very frequently		
A.	Tell your child about the information they can disclose on social media.	1	2	3	4	5	6	7
B.	Remind your child not to give out personal information on social media.	1	2	3	4	5	6	7
C.	Tell your child to stop any experience on social media if they feel uncomfortable or scared.	1	2	3	4	5	6	7
D.	Explain to your child about the dangers of social media.	1	2	3	4	5	6	7

2. How frequently do you do the following for your child? (1 = Not at all; 7 = Very frequently)

		Not at all				Very frequently		
A.	Restrict the type of social media platforms your child can visit.	1	2	3	4	5	6	7
B.	Set rules regarding your child's access to social media, such as Facebook, Twitter, YouTube, Instagram, WhatsApp, Line, etc.	1	2	3	4	5	6	7
C.	Limit the kind of activities your child can do on social media.	1	2	3	4	5	6	7
D.	Restrict the amount of time your child can use social media.	1	2	3	4	5	6	7
E.	Limit your child to using social media only for school work.	1	2	3	4	5	6	7

3. How frequently do you do the following for your child? (1 = Not at all; 7 = Very frequently)

		Not at all				Very frequently		
A.	Log in to your child's social media account(s) to check their social media friends list.	1	2	3	4	5	6	7
B.	Log in to your child's account(s) to check their conversations with others.	1	2	3	4	5	6	7
C.	Log in to your child's social media account(s) to check the games they play.	1	2	3	4	5	6	7
D.	Log in to your child's social media account(s) to check the pictures they post.	1	2	3	4	5	6	7

E.	Check your child's social media profile(s).	1	2	3	4	5	6	7
F.	Add your child as a friend on social media to check what they post on social media.	1	2	3	4	5	6	7

4. How much do you agree with the following statements? (1= Strongly disagree; 7= Strongly agree)

		Strongly disagree				Strongly agree			
A.	You ask you child to share their social media account(s) and password(s) with you.	1	2	3	4	5	6	7	
B.	You know your child's social media account(s).	1	2	3	4	5	6	7	

SECTION B

One concern of cyber safety is cyberbullying, which refers to an aggressive, intentional act carried out by a group or individual, using electronic forms of contact, against a victim who cannot easily defend him or herself.

5. How frequently did your child do the following things in the last 12 months? (1=Not at all; 7=Very frequently)

		Not at all			Very frequently			
A.	Made rude or mean comments to someone on social media.	1	2	3	4	5	6	7
B.	Spread rumours about someone on social media, whether they are true or not.	1	2	3	4	5	6	7
C.	Made aggressive or threatening comments to someone on social media.	1	2	3	4	5	6	7

6. How frequently did your child experience the following things in the last 12 months? (1=Not at all; 7=Very frequently)

		Not at all			Very frequently			
A.	Received rude or mean comments on social media.	1	2	3	4	5	6	7
B.	Someone spread rumours about him/her on social media, whether they are true or not.	1	2	3	4	5	6	7
C.	Received aggressive or threatening comments on social media.	1	2	3	4	5	6	7

INSTRUCTION: Please tick your responses.

SECTION C

1. Your age: _____ years old
2. Your gender: ☐ Male ☐ Female
3. Your monthly household income:
 - ☐ \$1000 or below
 - ☐ \$1001 to \$3000
 - ☐ \$3001 to \$5000
 - ☐ \$5001 to \$7000
 - ☐ \$7001 to \$9000
 - ☐ \$9001 or above
 - ☐ Prefer not to disclose

Thank you very much for participating in our survey. Again, we want to assure you that all the data from this study will be coded and identified only by a subject number. The data will only be used purely for the purposes of completing this project.

Once again, we thank you for participating in this survey.

*****END OF SURVEY*****

Thank you very much for filling out this questionnaire