



# Parental restrictive mediation of children's internet use: Effective for what and for whom?

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## Abstract

The purpose of this study was to identify predictors of parental restrictive mediation and to examine the effects of restrictive mediation on children's internet use. Data were obtained through a survey of Korean children from fourth to ninth grade, and their parents. According to the findings, the age of a child, parental perception of the negative influence of the internet, parental perception of their child's low self-control, and parental internet skills were significant predictors of restrictive mediation. Restrictive mediation was significantly associated with reduced online risks and reduced time spent online, and was not associated with addictive use. In particular, the effects of restrictive mediation on online time and online risks were greater for a child with low self-control. This study advances the understanding of the effects, predictors and moderators of restrictive mediation.

## Keywords

Addictive internet use, child's self-control, online risks, online time, parental mediation, restrictive mediation

## Introduction

Research on children's internet use documents the diverse opportunities and risks that children and adolescents may encounter online. Opportunities include learning, communication, creativity and expression. Risks include exposure to pornographic, violent or hateful content, invasion of privacy, cyber-bullying and inappropriate contact

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(Guan and Subrahmanyam, 2009; Livingstone, 2003; Livingstone and Helsper, 2010; Valkenburg and Soeters, 2001). While parents cognitively recognize both online opportunities and risks, parenting practices are oriented toward restricting internet use, which reflects parental anxiety about online risks and associated negative outcomes for their children (Tripp, 2011). Korean parents also report that they are primarily worried about excessive use, uncontrolled use, preoccupation with the internet, and negative consequences in terms of academic performance and interpersonal relationships. Based on these concerns, they choose restrictive strategies, which include limiting time spent online and access to content online (Cho and Bae, 2010; Lee and Jeon, 2011).

However, the effects of parental restrictive strategies are unclear. Some empirical studies suggest that time restriction is ineffective in reducing time spent online (Lee and Chae, 2007; Roberts et al., 2005), exposure to online risk (Livingstone and Helsper, 2008), and compulsive internet use (Van den Eijnden et al., 2010). Meanwhile, it has been reported that restricting online interactions and using filtering and blocking software may be helpful in reducing unwanted exposure to sexual materials (Livingstone and Helsper, 2008; Mitchell et al., 2003). Given that parents rely on unproven restrictive strategies in order to relieve their anxieties, studies that examine the effectiveness of restrictive mediation for reducing exposure to online risks and addictive tendencies are needed.

An understanding of effective parental mediation is mainly drawn from studies of children's television use, and has been applied to other media including video games and the internet (e.g. Livingstone and Helsper, 2008; Mesch, 2009; Nikken and Jansz, 2006; Shin and Huh, 2011). The growing body of literature on parental mediation of digital media suggests that parents implement more diverse restrictive strategies, but these strategies may be less effective than strategies used in television mediation (Eastin et al., 2006; Lee and Chae, 2007; Livingstone and Helsper, 2008; Shin and Huh, 2011). Given that the efficacy of parental mediation regarding children's internet use has not been fully examined, the present study has three specific objectives: (1) to identify what factors motivate parents to practice restrictive mediation of their child's internet use; (2) to examine whether parental restrictions are effective at reducing the amount of time online, decreasing exposure to online risks and preventing addictive tendencies; and (3) to determine for whom restrictive mediation is most effective.

This study involved children ages 10 to 15 years old, an age range during which there is often tension between parents and children regarding internet use. By age 10, children have entered puberty, which is related to physical, emotional and social changes. Children face developmental tasks such as building a sense of identity and creating intimate social relationships. They become actively involved in diverse social interactions in a variety of new contexts, including the internet. Due to these increased interactions, children are more exposed to both opportunities and risk. Parents have a significant influence on how 10 to 15 year old children manage opportunities and risks (Subrahmanyam and Greenfield, 2008; Windle, Spear, Fuligni et al., 2008).

## Conceptualization of restrictive mediation

Parental mediation refers to a parent's interactions with children regarding their media use (Nathanson, 2008). Research on parental mediation focusing on children's television viewing has identified three styles of mediation: restrictive mediation, co-viewing and instructive or active mediation (Nathanson, 2001; Valkenburg et al., 1999; Warren, 2005). Restrictive mediation refers to limiting the amount of a child's viewing time and forbidding a child to watch certain programs. Co-viewing involves sharing the media experience with children and watching together without critical discussion. Instructive mediation (i.e. active mediation) refers to parent-child discussions about television programs so as to stimulate the child's critical thinking and understanding.

While studies on parental mediation of internet use share the operational definitions of restrictive mediation, co-viewing and instructive mediation, approaches to measure parental mediation types vary across studies. The first approach, which is employed in Lee and Chae (2007), Mesch (2009) and Shin and Huh (2011), used a single question to measure a mediation strategy. However, this may raise concerns about the validity of the mediation scale. The second approach involves subdividing respective mediation strategies into two or more types, and then measuring them with multiple indicators. For example, Eastin et al. (2006) addressed instructive mediation, co-viewing, time restriction, content restriction and technological monitoring as unique mediation types, and each type was measured with three or four questions. This approach ignores the possibility that strong correlations among sub-types of restrictive mediation may exist. The third approach is to identify mediation types using exploratory factor analysis. However, the mediation types resulting from the exploratory factor analysis are sometimes different from the theoretical constructs and from results of other empirical studies. For example, Livingstone and Helsper (2008) identified four mediation types through factor analysis: active and co-use, technical restrictions, interaction restrictions and monitoring. Unlike the mediation types addressed in the existing literature, active mediation and co-use mediation were combined into the same category, and diverse restriction strategies were divided into three different categories: technical restrictions, interaction restrictions and monitoring. Additionally, while most studies consider a time limit of media use as a type of restrictive mediation, their factor analysis found that time restriction was part of the active and co-use mediation type. A potential common problem of studies using different measurement approaches is the lack of theoretical conceptualization of each type of parental mediation. Thus, the current study proposes that each type of parental mediation should be conceptually identified in the context of parenting practices for socialization.

Parental mediation is a parenting practice specifically oriented to a child's media use. Darling and Steinberg (1993) argue that parenting practices should be distinguished from parenting style. While parenting style refers to 'a constellation of attitudes toward the child that are communicated to the child and create an emotional climate in which the parent's behaviors are expressed', parenting practices are 'behaviors defined by specific content and socializing goals and used by parents to help children reach those goals' (Darling and Steinberg, 1993: 492). That is, parenting style is independent of a specific socialization goal, but parenting practices should be operationalized depending on the hypothetical relationship between a socialization goal and child outcome.

Research on socialization proposes a domain-specific account, which assumes that the socialization goals and the interaction patterns are specific to each social domain. These domains include: (1) the protective care, which involves providing for the safety and feeding of dependent offspring, (2) the control domain, which includes managing the control between parents and children, (3) the coalition formation domain, which facilitates the establishment and maintenance of shared cultural practices, (4) the guided learning domain, and (5) the reciprocity domain, which involves the regulation of matched benefits (Beaulieu and Bugental, 2007; Grusec and Davidov, 2007, 2010). Each domain is characterized by a particular form of parental behaviors. For example, in the protection domain, parenting involves sensitively responding to children's needs for protection, which children perceive to be comforting so that they develop a sense of security. In the control domain, parenting involves using discipline to discourage their children's undesirable behaviors and encourage their pro-social behaviors.

Based on this domain-specific account of socialization, the current study suggests that parental restrictive mediation of a child's internet use is a parenting practice which occurs in the control domain of socialization, with the socialization goal of controlling a child's impulses and negative outcomes stemming from undesirable use of the internet within a hierarchical power relationship between parents and child. The specific parenting practices that are considered restrictive mediation include parental behaviors that control a child's online activities in terms of time, content, membership registration and privacy, by forcing children to follow rules, instructions and technical restrictions.

### *Antecedents of restrictive mediation*

The literature on parental mediation has identified demographic variables of the child and parental perception of media effects as significant predictors of mediation. The younger the child, the more diverse strategies parents implement and the more frequently these are employed by parents (Ahn, 2008; Eastin et al., 2006; Hoffner and Buchanan, 2002; Livingstone and Helsper, 2008; Nathanson, 2001; Warren et al., 2002). However, gender differences in parental mediation are not consistent. Livingstone and Helsper (2008) found that gender was not related to the level of parental mediation, but Eastin et al. (2006) found that parents are more likely to restrict online time and content for their sons than for their daughters.

Parental perception of media effects on children has also been examined as a significant predictor of parental mediation (Nathanson, 2001; Shin and Hur, 2011; Valkenburg et al., 1999). Parents who believe that media have negative effects on their children are more likely to implement diverse mediation strategies (Valkenburg et al., 1999), especially restrictive mediation (Nathanson, 2001). This tendency is also found in studies of parental mediation of video game playing. That is, parents who believe that video games have a negative influence on their children tend to be more engaged in restrictive mediation such as restricting game playing (Shin and Huh, 2011).

The fact that a child's age and parental perception of negative media effects are related to more restrictive strategies suggests that restrictive mediation is motivated by parental intention to control the influences of media on their young children who have yet to develop the ability to manage risks. Therefore, parental perception of a child's low

self-control should also be examined as a predictor of restrictive mediation, which the existing literature has not yet addressed. It is hypothesized that parents who are concerned with a child's lack of self-control tend to use more position-centered mediation strategies, such as restrictive mediation. Additionally, unlike with traditional media, parental mediation of children's internet use requires internet-related skills. Livingstone and Helsper (2008) found that both the frequency of parental internet use and the level of internet skills were significant in predicting the level of parental mediation. Thus, the current study examines the age of the child, parental perception regarding the negative influence of the internet, parental perception of the child's self-control, and parental internet skills as predictors of parental restrictive mediation of the internet.

H1. The age of the child will be negatively related to the level of restrictive mediation.

H2. Parental perception of the internet's negative influence on their child will be positively related to the level of restrictive mediation.

H3. Parental perception of their child's low self-control will be positively related to the level of restrictive mediation.

H4. Parental internet skills will be positively related to the level of restrictive mediation.

### *The effects of restrictive mediation*

The literature on parental mediation of television has consistently found that instructive or active mediation based on parent-child discussion of media content has positive outcomes, such as learning from educational programs and increasing pro-social behavior (Huston and Wright, 1994), reducing the formation of gender stereotypes (Nathanson et al., 2002), and creating skeptical attitudes toward advertising (Buijzen and Valkenburg, 2005; Fujioka and Austin, 2003). Meanwhile, the effect of restrictive mediation of television use depends on a child's age. For example, Vandewater et al. (2005) examined the relationship between parental rules regarding television use and television viewing of very young children (ages six months to six years), and found that parents with time rules reported their children were watching less television. A study by Nathanson (2002), who examined adolescents in high school (defined as grades 9 to 12), found that restrictive mediation was related to a more positive attitude toward television content and more viewing of objectionable content with friends.

The few studies regarding restrictive mediation of the internet have yielded inconsistent results. For example, Cho and Cheon (2005) found that for children that are 11 to 16 years old, perceived parental control of a child's internet usage was negatively related to exposure to negative internet content, including violent games and sexually explicit sites. Wolak et al. (2007) demonstrated that the use of filtering and blocking software was negatively related to unwanted and wanted exposure to online pornography, using data from a nationally representative sample of children 10 to 17 years old. Livingstone and Helsper (2008) found that only restrictive mediation of online interactions was related to reduced online risk, and other mediation strategies were not. Meanwhile, Van den Eijnden et al. (2010) conducted a cross-sectional analysis and a longitudinal analysis and

found that time and content restrictions were not related to compulsive internet use in either analysis.

Although they present inconsistent findings, the previous studies suggest three potential effects of restrictive mediation: time spent online, exposure to negative content or risks, and addictive or compulsive internet use. The current study aims to expand the understanding of parental mediation by examining the three types of effects in a single study with the sample of children ages 10 to 15 years old, and by exploring moderators of these effects. The first effect of restrictive mediation that the current study will examine concerns time spent online. Parental concerns about time spent using media stem from the displacement of worthwhile activities by media use. Youth activities are categorized into work (i.e. activities that are obligatory) and leisure (i.e. activities that children choose and are typically non-instrumental). Among leisure activities, media use is a form of passive leisure, in contrast to active leisure such as playtime and athletics (Larson and Verma, 1999). Given that parents manage their children's time in order to promote work and active leisure rather than physically and mentally passive leisure (Jordan, 1992; Larson and Verma, 1999), restrictive mediation will be implemented to reduce the amount of time their child would spend online.

The second effect of restrictive mediation is related to children's exposure to online risks. The risks children may encounter online include content risks such as exposure to violent, hateful and sexual content; contact risks involving disclosure of personal information, being bullied and meeting strangers; conduct risks involving creation and distribution of pornography, hacking and bullying; and commercial risks such as commercial exploitation and unwanted collection of personal data (Hasebrink et al., 2009; Valcke et al., 2011). According to Pew Internet & American Life Project surveys, two-thirds of teens play violent video games, and 32 percent of gaming teens report that they enjoy games rated Mature or Adult Only (Lenhart et al., 2008). Teenagers who engage in instant messaging and chatting are vulnerable to interaction with strangers online, which results in an increased risk of sexual solicitation (Mitchell et al., 2008; Wolak et al., 2008). The fact that different types of online activities are related to different levels of online risks suggests that parental restriction of certain types of internet activities may be helpful for reducing exposure to online risks.

The third effect of restrictive mediation examined is addictive internet use in children. Although excessive use and addictive use are closely related, they are conceptually distinct. That is, while excessive internet use is related to the amount of time online, addictive use involves difficulty in self-regulation of internet use (Caplan, 2005; Larose et al., 2003). However, parental concerns for their child's excessive use are linked with concerns for addiction because, for parents, excessive use and addictive use are seen as similar phenomena in that both result in negative consequences in terms of academic performance and interpersonal relationships. Parents implement diverse restrictions in order to prevent their children from becoming addicted to the internet, but they are unsure of the effectiveness of these restrictive strategies (Lee and Jeon, 2011).

While there is not enough research to verify the effects of parental restrictive mediation on time spent online, exposure to online risks and addictive internet use, the current

study suggests the following hypotheses based on the literature on parental mediation of television and parental expectations regarding the effects of their mediation.

H5. Restrictive mediation will be negatively related to the amount of time children spend online.

H6. Restrictive mediation will be negatively related to children's exposure to online risks.

H7. Restrictive mediation will be negatively related to children's addictive internet use.

RQ1. Are the effects of restrictive mediation moderated by a child's age, gender and level of self-control?

## Methods

### *Sample and procedure*

Children from 10 to 15 years old were recruited using the quota sampling method on the basis of location, gender and school grade. Their parents were also invited to participate in a parent's survey. The parents had been informed that the survey was designed for research on children's internet use, and they were asked to respond to questions regarding restrictive mediation techniques, perception of the negative influence of the internet, perception of a child's self-control, and parental internet skills. Then, children participated in a child's survey including questions about online time, risky behaviors, addictive use, self-control and demographic variables. The child's survey and the parent's survey were separately conducted without each other's presence and with only the presence of an interviewer. The trained interviewers explained to children that the surveys were designed to determine how the child used the internet, and the interviewers ensured that the child could respond to the questions without parental interruption and monitoring.

A total of 600 parent-child pairs responded to the surveys. Among the parents participating in the survey, 566 respondents were mothers and only 34 respondents were fathers. To avoid the compounding effect of parental gender with regard to mediation strategies, only the data collected from 566 mothers and their children were used for the current study. The sample of children consisted of 290 boys (51.2 percent) and 276 girls (48.8 percent). All of them used the internet at least once a month. The average time a child spent online per day on weekdays was 72 minutes, and the average time spent per day during the weekend was 142 minutes. The average age of the mothers was 41 years (ages ranged from 31 to 53), and 45 percent had a college degree. Twenty-eight percent held full-time jobs, and 13 percent held part-time jobs.

### *Measures*

**Restrictive parental mediation.** Restrictive mediation refers to parental techniques that parents implement to limit and prohibit children's internet use. Parents were asked to respond to nine items on a five-point scale ranging from 1 (never) to 5 (always). The items included time restriction ( $M = 3.72$ ,  $SD = .95$ ), restricting access to content ( $M =$



3.34,  $SD = 1.09$ ), restricting disclosure of personal information ( $M = 3.75$ ,  $SD = 1.06$ ), limiting membership registration ( $M = 3.34$ ,  $SD = 1.06$ ), prohibiting online shopping ( $M = 3.40$ ,  $SD = 1.10$ ), prohibiting online games ( $M = 3.41$ ,  $SD = 1.07$ ), prohibiting online chatting ( $M = 3.52$ ,  $SD = 1.09$ ), use of a computer login system ( $M = 2.41$ ,  $SD = 1.26$ ), and installation of filtering software ( $M = 2.74$ ,  $SD = 1.33$ ). A composite scale of restrictive mediation was constructed by averaging the scores of the above nine items ( $M = 3.29$ ,  $SD = .68$ ,  $\alpha = .79$ ).

*Child's gender.* Boys were coded as '0' and girls as '1'.

*Child's age.* Children's ages were measured according to social age, i.e. school year. The grades ranged from 1 (fourth grade) to 6 (ninth grade).

*Child's low self-control.* Low self-control was measured according to the following six components proposed by Grasmick et al. (1993): impulsiveness, simple tasks, risk-seeking, physical activities (i.e. dislike of cognitive activities), self-centeredness and temper. Specifically, the items included 'doing whatever brings me pleasure here and now, even at the expense of the exam tomorrow', 'tending to quit when things get complicated', 'enjoying risky activities for fun', 'tending to delay homework', 'teasing other people', and 'losing my temper pretty easily'. Both parents and children were asked to evaluate these six items on a five-point scale (1 = strongly disagree; 5 = strongly agree). A parent's report of a child's low self-control was used as a predictor of parental restrictive mediation ( $M = 2.61$ ,  $SD = .77$ ,  $\alpha = .83$ ), and a child's report was used as a predictor of time spend online, exposure to online risk and addictive internet use ( $M = 2.65$ ,  $SD = .82$ ,  $\alpha = .86$ ).

*Parental perception of the negative influence of internet use.* Parents were asked how well they agreed with the five items describing possible negative influences of the internet on their child (1 = strongly disagree; 5 = strongly agree). The negative influences included exposure to pornographic content, exposure to violent content, negative influences on academic performance, health problems and interpersonal relationship problems ( $M = 3.95$ ,  $SD = .58$ ,  $\alpha = .92$ ).

*Parental internet skills.* Parents were asked to rate their ability for the following ten online activities: finding the information they needed online, exchanging emails, managing a blog or a personal homepage, playing online games, uploading documents, selecting useful information, evaluating online information, searching for news, involving themselves in activities of an online community, and doing online shopping on a scale ranging from 1 (very poor) to 5 (very good) ( $M = 3.15$ ,  $SD = .68$ ,  $\alpha = .89$ ).

*Child's online time.* The children were asked to report the average time in minutes spent online per day on weekdays ( $M = 72.48$ ,  $SD = 44.27$ ) and during the weekend ( $M = 142.31$ ,  $SD = 66.13$ ).



*Child's exposure to online risks.* Online risks included content risks, privacy and contact risks. The children were asked to answer, using a binary response, whether they had encountered these risks on the internet during the last month. A composite scale recorded the number of risks encountered (ranging from 0–8). The risks included exposure to pornographic content accidentally (14.8 percent) and intentionally (7.5 percent), exposure to violent content accidentally (19.2 percent) and intentionally (9.0 percent), giving out personal information (28.3 percent), and giving out information about parents (21.0 percent). The risks also included contact risks such as online communication with strangers (22.3 percent) and face-to-face communication with someone first encountered online (6.7 percent).

*Child's addictive internet use.* Addictive internet use was measured by Young's internet addiction scale (1999). The items included 'I use the Internet to escape from depressed or anxious moods', 'I feel more excited when online than when doing offline activities', 'I have made unsuccessful attempts to control my internet use', 'I spend more time online than I intend to', 'I feel restless, moody, depressed, or irritable when attempting to stop internet use', 'I am unable to reduce the amount of time I spend online and the time is actually increasing', 'I feel my academic performance is jeopardized because of internet use', and 'I experience conflicts with family members because of internet use'. Children were asked to rate their agreement with these eight statements (1 = strongly disagree; 5 = strongly agree) ( $M = 2.99$ ,  $SD = .85$ ,  $\alpha = .93$ ).

## Results

### *Predictors of restrictive mediation*

Multivariate regression was conducted to identify predictors of parental restrictive mediation. Table 1 shows findings for H1, H2, H3 and H4. As predicted in H1, a child's age (i.e. school grade) was negatively associated with the level of restrictive mediation ( $\beta = -.10$ ,  $p = .01$ ). The younger the child, the more frequently parents implemented diverse restrictive strategies. However, a significant relationship between a child's gender and

**Table 1.** Regression analysis to identify predictors of restrictive mediation.

	Restrictive mediation		
	$\beta$	$t$	$P$
Child's age (school grade)	-.10	-2.58	.010
Child's gender (boys=0)	.04	1.00	.319
Parental perception of negative internet influence	.22	5.45	.000
Child's low self-control	.19	4.71	.000
Parental internet skills	.12	3.07	.002
		$R^2 = .10^*$	

\* $p < .001$ .

parental restrictive mediation was not found. As predicted in H2, there was a positive association between parents' perception of negative influence of the internet and restrictive mediation ( $\beta = .22, p = .000$ ). The more strongly parents perceived the negative influence of the internet on a child, the more frequently they practiced diverse restrictive strategies. As predicted in H3, there was a positive association between parental perception of their child's low self-control and restrictive mediation ( $\beta = .19, p = .000$ ). That is, the lower parents rated their child's self-control, the more frequently they used restrictive strategies. H4 was also supported. Parental internet skills were positively associated with frequency of restrictive mediation ( $\beta = .12, p = .016$ ).

### *Effects of restrictive mediation*

Table 2 shows findings for H5, H6 and H7, each of which concerns the effect of restrictive mediation on children's internet usage. A regression was separately run for each of the dependent variables: time spent online during weekdays and during the weekend, exposure to online risks, and addictive internet use. As predicted in H5, parental mediation was negatively related to time spent online during weekdays ( $\beta = -.21, p = .000$ ), and during the weekend ( $\beta = -.08, p = .000$ ). H6, which predicted the effect of parental mediation on reduced online risks, was also supported. The result indicated that the more frequently parents practiced restrictive mediation techniques, the less frequently children were exposed to online risks including content-related risks, privacy risks and contact risks ( $\beta = -.14, p = .001$ ). However, H7 was not supported. Parents' restrictions were not effective at reducing children's addictive tendencies.

**Table 2.** Regression analyses to examine the effects of restrictive mediation.

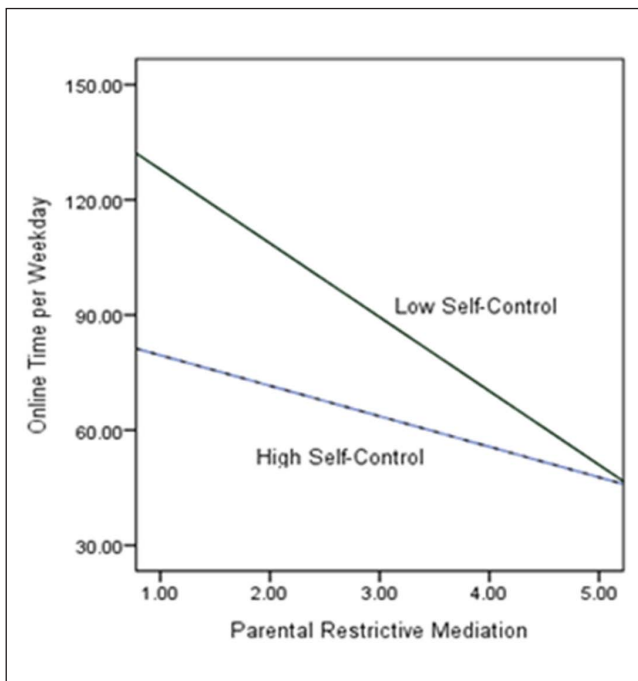
	Online time (weekday)	Online time (weekend)	Exposure to online risks	Addictive internet use
	$\beta$	$\beta$	$\beta$	$\beta$
<b>Child factor:</b>				
Gender (boys=0)	-.14***	-.27***	-.07	-.26***
Age (school grade)	.05	.13***	.11**	.10*
Low self-control	.18***	.21***	.26***	.35***
<b>Parental factor:</b>				
Restrictive mediation	-.21***	-.18***	-.14***	-.05
<b>Interaction term:</b>				
Gender $\times$ restrictions	.05	-.01	-.03	.07
Age $\times$ restrictions	.03	.04	-.02	-.00
Low self-control $\times$ restrictions	-.09*	-.06	-.13**	-.01
	$R^2 = .10***$	$R^2 = .19***$	$R^2 = .11***$	$R^2 = .25***$

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

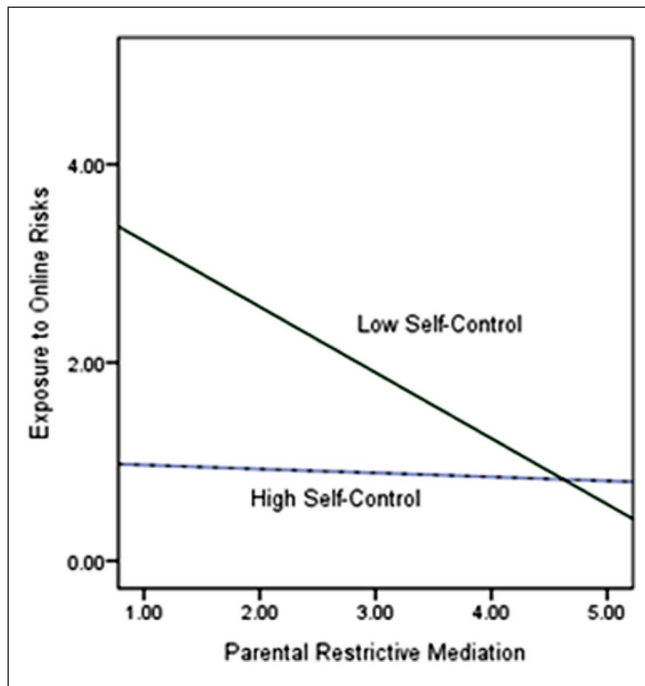
The interaction terms in Table 2 show findings for RQ1, which addresses whether the effect of parental mediation on children's internet usage is moderated by a child's characteristics (i.e. age, gender and low self-control). As seen in Table 2, there were interaction effects between parental restrictive mediation and a child's low self-control on time spent online during weekdays ( $\beta = -.09$ ,  $p = .04$ ), and on exposure to online risks ( $\beta = -.13$ ,  $p = .002$ ). In order to understand the significant interactive relationships, the children in the study were divided into two groups based on their self-control score. The cut-off value was the mean of a child's low self-control ( $M = 2.65$ ). The effect of restrictive mediation on reduced time spent online during weekdays was greater for children with lower self-control than children with higher self-control (Figure 1). The effect of restrictive mediation on reduced online risks was significant only for children with lower self-control. For children with higher self-control, the level of exposure to online risks was very low, regardless of parental restrictive mediation (Figure 2).

## Discussion and conclusions

The purpose of this study was to identify factors that influence parents to practice restrictive mediation, and to examine whether parental restrictions are effective at reducing the amount of time spent online, decreasing exposure to online risks, and preventing addictive tendencies. We also sought to determine for whom restrictive mediation is more effective. According to the findings, parental perception of the negative influence of the



**Figure 1.** Interaction of restrictive mediation and a child's self-control on online time.



**Figure 2.** Interaction of restrictive mediation and a child's self-control on online risks.

internet, parental perception of their child's low self-control, and the age of the child were significant predictors of restrictive mediation. The composite measure of restrictive mediation was significantly associated with reduced amount of time spent online and reduced exposure to online risks. These effects of restrictive mediation were greater for children with low self-regulation.

This study has several theoretical and methodological implications. In terms of predictors of parental mediation, previous studies have focused on parental perception of media influence (Meirick et al., 2009; Nathanson, 2001; Shin and Huh, 2011; Valkenburg et al., 1999). They found that negative parental perception of media influence motivates restrictions of children's media use, which is consistent with the finding of the current study. Furthermore, the current study proposed that parental perception of their child's self-control is another significant predictor of parental restrictions, and then verified this association. This suggests that restrictive mediation should be viewed as a parenting practice responding to a child's characteristics, especially for children with low levels of self-control.

In terms of effects of parental mediation, the existing literature tends to overlook a child's individual differences in the practice and effects of parental mediation, although the goals of socialization and effective parenting strategies depend on the child's developmental status (Grusec and Davidov, 2010; Shin and Huh, 2011). To avoid this, the current study examined the moderating effect of a child's characteristics, including age, gender and self-control, on the association between restrictive mediation and children's internet usage. As a result, the level of a child's self-control moderated the effect of

restrictive mediation. This confirms that effects of parenting practices depend on the child's developmental status, particularly in self-regulation.

For children with lower self-control, the proximal goal of parenting practices could be protecting children from risky environments by controlling their impulses through external rules. For this goal, parental restrictive strategies may be effective. However, the ultimate goal of socialization in the control domain is to develop a child's self-regulation through internalization of societal values and self-generation of standards and attitudes guiding their behaviors, so that external pressure is no longer necessary (Grusec and Davidov, 2010). This study found that children with higher levels of self-control did not need parental restrictions for reducing online risks. This suggests that parental mediation of children's internet use should evolve from restriction, which involves external control of children's impulses and associated negative outcomes, to parent-child interactions, which support children's development of self-regulation and self-management of online opportunities and risks.

From a practical standpoint, this study emphasizes that parental internet skills or literacy are required in order to implement diverse mediation strategies. An individual's internet skills can be partly developed simply through experience with the internet. However, parental internet skills are influenced by his or her socio-economic status, and economically disadvantaged families in particular experience a digital generation gap between parents and children (Clark, 2009). Thus, formal and informal media education programs should offer opportunities for parents, particularly socially and economically disadvantaged parents, to learn how to use the internet in order to better understand how children become involved in online activities, and to adopt effective strategies using technological tools such as filtering and monitoring software (Livingstone, 2009). Furthermore, media education programs for parents should be implemented not only to protect children from negative media influences, but to help empower children to practice critical thinking and to take advantage of diverse online opportunities (Mendoza, 2009).

The limitations of this study should be addressed in future research. The interpretation of results should take into account the nature of cross-sectional data. Although cross-sectional data cannot verify causal relationships between parental mediation strategies and a child's online activities, the hypothesized relationship examined in the current study considers parental mediation as a cause and a child's online time, online risks and addictive use as effects, given that parents implement diverse restrictions in order to influence their child's online behaviors. Future studies should examine the long-term effects of parental restrictions on young internet users. The findings are limited to Korean children from 10 to 15 years old. As expected, the younger the child, the more frequently a parent implemented diverse restrictions. Regardless of a child's age, parental restrictive mediation was negatively associated with online time and online risks, and not associated with addictive use. Those findings should be interpreted taking into consideration the ages of the children.

Despite these limitations, the current study provides theoretical implications for researchers interested in parental mediation of children's internet use. The way people use the internet is individualized. Accordingly, the effects of the internet depend on a user's characteristics, motivation for internet use, and the type of online activities. For

children, the individualization of media use and media effects paradoxically emphasizes the role of parental mediation, with the expectation that parental involvement would guide the way children use the internet. Considering that this expectation has not been fully examined, the current study contributes to advancing an understanding of the effects, predictors and moderators of restrictive parental mediation.

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