Parental mediation, peer norms and risky online behavior among adolescents

Abstract

Previous studies have shown that parental mediation of adolescents online is associated with the latter's participation in risky behavior online and being a victim of online harassment and bullying. However, there is a paucity of studies investigating the differential contribution of peers' norms and parental mediation on adolescents' engagement in risky online behavior. To fill this gap in the literature, we collected data from a representative sample of 495 sixth to eleventh grade students in a large city in Israel. Participants responded to an online survey measuring three types of parental mediation: active guidance, restrictive supervision and non-intervention. We measured risky behavior online with items indicating the frequency of posting personal details, sending an insulting massage and meeting face-to-face with a stranger met online. In addition, respondents reported their perceptions about their peers' attitudes toward various risky online behaviors. Multivariate findings show that after controlling for age, gender, time spent online and online activities, only restrictive parental supervision had a significant effect. However, such supervision actually increased adolescents' risky behavior online. Perceptions that one's peers approve of such behavior reduced the effect of restrictive parental supervision, leading to increased risky actions online. The results emphasize the importance of peer networks in youngsters' engagement in risky online activities.

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Introduction

Information and communication technologies have become integrated into the social and entertainment life of adolescents and are important tools for searching for information, connecting to parents and peers, and consuming and producing content (Hasebrink et al., 2009; Livingstone et al., 2011). At the same time studies have focused on the misuse of new technologies and their potential for offensive and harmful behavior (Hope, 2007; Patchin & Hinduja, 2006; Smith et al., 2008; Tokunaga, 2010). A consistent finding of previous studies is that certain online activities are conducive to higher risks of harassment and cyberbullying. This is particularly true of online activities that involve contact with strangers, content production (such as posting personal photographs or video clips) and activities in which children disclose private information (Mesch, 2009).

In searching for the factors that can minimize these risks, several studies have examined the role of parents in the use of media and attitudes toward risky behavior. These studies indicate that parents can play a role in reducing young people's susceptibility to engaging in risky activities by guiding the child's media use (Guo & Nathanson, 2011). Some types of parental mediation are associated with a decrease in the involvement in risky online activities. Restrictive mediation (setting rules about and controlling the time that is spent on the media) and to a lesser extent active mediation (critically evaluating media content and/or giving instructions on how to interpret media) seem to be effective in minimizing online risks. However, other activities such as co-use (parents and children consuming media content together) did not reduce involvement in risky online behaviors (Nikken & de Graaf, 2012).

While many studies have been devoted to understanding the role of parents, and several studies have examined the role of friends, there is a paucity of studies about the differential contribution of family cohesion, parental monitoring and peer norms on youngsters' involvement in risky online activities. Adolescence is a period in which social relationships outside the family expand and include the peer group. Social interaction with peers provides a forum for learning and refining the socio-emotional skills needed for enduring relationships. Furthermore, as the social world of adolescents expands, peer beliefs and activities influence their behavior. The values of the youngsters' peers compete with their parents' value system in shaping the former's activities. The goal of this study is to fill this gap and to investigate the differential contribution of various forms of parental mediation and peers' injunctive norms on the risky online behavior of adolescents.

1.1. Parental monitoring and parental mediation

In the transition from childhood to adolescence, an important developmental task is the achievement of personal autonomy. This process is gradual as adolescents explore the limits of accepted behavior. The role of parents in monitoring their children's activities is critical for restricting involvement in both externalizing and internalizing behavior. Parental monitoring refers to activities that allow parents to know where their children are, with whom they are associating, and what they are doing when they are out of the house (Dishion & MacMahon, 1998). Given that the Internet has become a space for the social activity of youngsters, parental knowledge often requires learning about their children's online activities. In recent years, scholars have determined that parents use various strategies for acquiring this knowledge, and these strategies differentially affect the involvement of children in deviant and risky behavior online (Stattin & Kerr, 2000). In their discussion of parental monitoring Kerr

and Stattin (2000) differentiated among control, solicitation and disclosure as potential sources of parental knowledge about their children's activities. Control refers to parent initiated efforts to control their youngsters' behaviors through rules and restrictions. Solicitation refers to parents' active efforts to obtain information from their adolescents by questioning their children's friends and teachers, and using other surveillance methods. Thus, control and solicitation can be considered monitoring activities. Disclosure, in contrast, refers to the children's willingness to share and provide truthful information to their parents and is related to the degree of family cohesion. Studies that tested this conceptualization of parenting reported that disclosure is negatively associated with youngsters' breaking norms and risky online activities. For example, a study conducted among 733 adolescents aged 10-18 found that the more often adolescents tell their parents about their online activities, the fewer aggressive messages they send online (Law et al. 2010). However, the effect of control and solicitation are not consistent across studies (Kakiahra, Titlon-Weaver, Kerr & Stattin, 2010; Kerr, Stattin & Burk, 2010; Stattin & Kerr, 2000, Law et al. 2010).

In the study of media effects, a notion closely associated with parental monitoring is parental mediation, namely, parental activities directed at protecting their children from exposure to risky activities and dangers online (Livingstone, 2007). Previous studies have shown that some types of parental mediation reduce involvement in risky online activities. Restrictive mediation (e.g. setting rules about and controlling the time that is spent on the media) is close to parental solicitation as it involves actively seeking information about youngsters' online activities through social or technological devices. Previous work has shown that parental solicitation is

perceived as intrusive and an invasion of the child's autonomy. Such actions may actually motivate children to engage in risky online activities. Thus, we expect that:

H1: Parental monitoring activities (e.g. actively seeking information about their children's online activities through technological and social activities) will be positively related to the number of risky online activities.

H2: Parental support for their children's autonomy, conceptualized as parental mediation that does not involve intervention, will be negatively associated with the number of risky online activities.

1.2. Family cohesion

Family cohesion is defined as the "emotional bonding that family members have toward one another" (Olson, Russell, & Sprenkle, 1983, p. 60). The term implies the positive involvement of parents with their children, as reflected in shared activities, supportive behavior, and affection. The beneficial implications of family cohesion for children's behavior and development enjoy strong support in the social sciences (Baer, 2002; Coleman, 1988; Lamb et al., 1988). Adolescents who report being close to their parents show higher achievement in school, have fewer episodes of truancy, are less likely to drop out of school, and exhibit fewer emotional or behavioral problems (Amato & Rivera, 1999; McNeal, 1999; Otto &Atkinson, 1997). Past studies have suggested that families that have an internet connection at home differ from families that do not have internet connection at home, in their interactions, family time and conflicts. Previous studies have also reported that the frequency of adolescents' Internet use is associated with a decline in family cohesion even when controlling for personality characteristics. However, we cannot dismiss the possibility that Internet use can have positive effects on family cohesion too. For example, the Internet may be used in other family contexts to strengthen the boundaries of the

family and to create memories that help develop a collective identity. Following this argument, in this study we expect that:

H3: The greater the family cohesion, the fewer the number of risky online activities in which the adolescent is involved.

1.3. *The role of friends*

Adolescence is a time of major changes, including physical growth, the onset of sexual maturation, the activation of new drives and motivations, and a wide range of social and affective changes (Forbes & Dahl, 2010). Along with these changes, this period is characterized by increased involvement in risk-taking behaviors (Michael & Ben-Zur 2007). During this time, friends become central in the life of young adults, and adolescents start to see themselves as a part of social networks outside the family. Adolescents gradually start experimenting with behaviors and attitudes in order to develop their own unique personal style. Moreover, given that adolescents want to fit in with their peers, they are also sensitive to influences from their friends. With regard to media use, friends usually play a completely different role than parents. Whereas parents usually try to restrict risky media behavior and inspire critical thinking about media, friends may leverage media to test the boundaries of what is acceptable.

Social norms theory suggests that peers have an influence on adolescents' involvement in risky behavior (Berkowitz, 2005). This influence is rooted in the adolescents' beliefs about the norms that are prevalent among their peers. Such norms may dictate how to dress and behave, as well as expectations about the types of media to use and on how these media influence their friends' attitudes and behavior. For example, Baumgartner et al. (2010, 2011) determined that adolescents who expected their friends to engage in risky online sexual behavior were more prone to seek such activities themselves. Nevertheless, despite the central role of perceived peer norms

on the behavior of adolescents, studies have not examined yet the differential contribution of parental mediation and perceived peer norms on risky online behavior.

The social norms approach posits that there are two types of social norms: descriptive norms and injunctive norms. Descriptive norms can be defined as beliefs about what is actually done by most people in one's social group. These norms imply that if one believes that everybody is engaging in a certain behavior, one is prompted to engage in the same behavior (Lapinski & Rimal, 2005). Injunctive norms can be defined as beliefs about the approval of a certain behavior by one's peers, namely whether one's friends approve or disapprove of this behavior (Baumgartner, 2010). A study of 1,500 students that investigated the effect of peer norms on the intention to upload a personal video clip (a risky online behavior) found that the perception that significant others were doing so was positively associated with the intention to upload a video (Park, Jung & Lee, 2011). Another study investigated the role of perceived peer norms on the likelihood of illegal downloading intentions. The study conducted among college students found that, controlling for attitudes and residential status, norms were positively correlated with intentions to download material illegally through peer-to-peer programs (Wang & McClung, 2011). However, this study did not examine the effects of parental mediation. Thus, the results indicate that individuals have a tendency to conform to the expectations of other people who are important to them. Following this argument, we expect that

H4: The greater the perception that the norms of one's peers support engaging in risky online activities, the greater the number of risky online behaviors.

1.4. Gender, age and risky online activities

Studies also indicate that gender and age are important variables associated with risky online behavior. It is possible that as youngsters get older, they increase the

extent and type of Internet tools they use. As a result they engage in more activities that can lead to increased risky online behavior such as posting personal details and meeting face-to-face with strangers they met online. For example, a study conducted in Israel among 532 students aged 8-19 found that students in high school were more willing to give more information to strangers online than students in elementary school. The same study reported that 36% of high school students met face-to-face with a stranger they first met online compared to 4% of elementary school students (Lemish et al., 2009). Other studies reported an increase in the rate of cyberbullying between ages 11 and 16 (Smith et al., 2008; Ybarra & Mitchell, 2004).

Regarding gender, there is some evidence that boys and girls use the Internet differently. Boys are involved in conversations in chat rooms, while girls are more involved in email communication. These differences can lead to differences in risky online behavior (Mesch, 2009). In addition, boys are more likely to disclose personal information (family name, phone number, city of residence), while girls are more likely to post personal pictures (Lenhart & Madden, 2007). Thus, based on these findings we expect that:

H5: Boys will engage in more risky online activities than girls.

H6: The older the adolescent, the greater the number of risky online activities in which he or she will engage.

1.5. Exposure to online activities

The number and type of online activities in which youngsters engage differ in the extent to which they expose these adolescents to online risks. Consistent with this argument there is some evidence that frequent Internet use increases the exposure to online risks. In addition, participation in open chat rooms and writing in a blog may

expose youngsters to strangers and online risks (Liau et al., 2005). Therefore, we expect that:

H7: Increased frequency of Internet use and participations in blogs and chat rooms will be positively associated with the number of risky online activities.

2. Methods

2.1. Procedure

We collected data from students in grades six through eleven in 13 different schools in a large city in Israel. Parents were sent a letter informing them about the purpose of the survey and requesting permission for their children to participate in the study. The research ethics committee of the Ministry of Education reviewed and approved the study. Participants responded to an online survey that was administered in the schools' computer lab. The survey included 130 questions and took 45 minutes on average to complete.

2.2. Participants

A total of 495 participants aged 10-18 (females = 229, males = 266) were included in the analyses (M=13.83 years, SD=1.86). Of the participants, 14.7% were in sixth grade, 17.4% in seventh grade, 14.7% in eighth grade, 16.4% in ninth grade, 18.0% in tenth grade, and 18.8% in eleventh grade. The sample was representative of the student population attending the schools in that city.

2.3. Measures

2.3.1. Demographics

Participants indicated their age and sex. Age was measured as a continuous variable, and gender was introduced in the analysis as a dummy variable (boys=1 and girls=0).

2.3.2. Risky online behavior

Participants were asked to indicate the frequency with which they had engaged in three online behaviors in the past year. Responses ranged from 1 (never) to 5 (every day). Items included sending an insulting message, posting personal details, and meeting face-to-face with a stranger you met online. Factor analysis (varimax rotation) indicated that the items belonged to a single universe. Items were combined into a single scale by adding the scores of the individual items (scale α=.81).

2.3.3. Family cohesion

We measured this concept using items that reflected its definition as an emotional bonding that family members have with each other (Olson et al., 1983). Respondents were asked to indicate their degree of agreement with statements indicating that their family relationships were close, cohesive, attentive, supportive and loving. Adolescents responded using a 5-point Likert scale ranging from 1 (not at all) to 5 (strongly agree). The items were subjected to factor analysis (varimax rotation), resulting in one dimension with factor loadings between .0.80 and .93. Items were standardized, and a summed score was calculated. Cronbach's alpha was acceptable (.81).

2.3.4. Parental mediation

We measured this concept using three scales adapted from the study EU Kids Online (2010[1]).

Parental mediation through guidance. This scale contained six items. Respondents were asked to indicate whether their parents provided help in using the Internet, explained about sites that were not recommended for children, suggested ways to use the Internet safely, recommended how to behave with strangers online, helped when something bothered them online, and what to do when something

[1] http://www.lse.ac.uk/media@lse/research/EUKidsOnline/EU%20Kids%20II%20(2009-11)/Survey/Questionnaire%20for%20child.pdf

disturbed them online. More precisely participants were asked: "Have either of your parents ever done any of the following things with you? 1. Helped you when something is difficult to do or find on the internet; 2.Explained why some websites are good or bad; 3.Suggested ways to use the internet safely; 4. Suggested ways to behave towards other people online; 5. Helped you in the past when something has bothered you on the internet; 6. In general, talked to you about what you would do if something on the internet ever bothered you". Each item was coded as a dummy variable with "yes" responses coded as 1 and "no" as 0. The items were combined into a single scale (α=.84) by summing the items.

Parental mediation through supervision. Respondents were asked to indicate the extent to which their parents checked their emails or IM accounts, their Facebook profile, their IM or Facebook contact list (i.e., " When you use the internet at home do either of your parents sometimes check any of the following things: The messages in your email or instant messaging account; Your profile on a social network or online community; Which friends or contacts you add to your social networking profile or instant messaging service"), and installed software on their computer that blocked non-recommended sites, recorded sites that were visited, and limited the amount of time they could use the Internet (i.e., "As far as you know, do your parents make use of any of the following for the computer that you use MOST OFTEN at home? Parental controls or other means of blocking or filtering some types of websites; Parental controls or other means of keeping track of the websites you visit; A service or contract that limits the time you spend on the internet"). The six items were introduced as dummy variables coded 1 for a positive response and 0 for a negative response. The responses were combined into a single scale by adding the responses to the items (α=.73).

Parental mediation through non-intervention. Respondents were asked to indicate the extent to which their parents allowed to them to freely use IM, download music and clips from the Internet, watch clips on the Internet, have a personal profile on Facebook, post personal information and upload personal pictures and clips online(e.g., Do your parents currently let you do whenever you want: "Use instant messaging; Download music or films on the internet; Watch video clips on the internet; Have your own social networking profile; Give out personal information to others on the internet; Upload photos, videos or music to share with others). The answers were coded into two categories: 1 (allowed all the time) and 0 (do not allow me). Responses were combined into a single scale by summing the responses to the items (α=.84).

2.3.5. Exposure to online activities

We measured this concept using a number of variables. Time online was measured with an item that asked respondents to indicate the frequency of Internet use in minutes during an average day. The variable was introduced in the multivariate analysis as a continuous variable. Internet activities were measured with items that asked respondents to indicate whether they had participated in the last month in an open chat room, open online forum, read or wrote a weblog and used IM to communicate with others. Variables were introduced as dummy variables in the multivariate analysis with 1 indicating use in the last month and 0 indicating non-use.

2.3.6. Peers' injunctive norms

We measured this variable using a scale that combined the responses to four items indicating the extent of agreement with the statements: 1) "Most of my friends think it is OK to post personal details online," 2) "Most of my friends think it is OK to upload an offensive clip," 3) "Most of my friends think it is OK to send an offensive message

to somebody" and 4) "Most of my friends think it is OK to meet face-to-face with a stranger they met online." Using factor analysis (varimax rotation) we found that the items belonged to a single universe and were able to combine the responses into a single scale of standardized scores (α=.81).

3. Results

3.1. Gender differences

Table 1 presents the results of a means comparison and a t-test based on gender for independent sample differences.

[INSERT TABLE 1 ABOUT HERE]

As the table shows, we did not find any statistically significant differences based on age, time spent online or family cohesion. In terms of parental mediation, we found only one difference. The average of parental mediation through guidance was higher for girls than boys. There were no statistically significant differences based on gender in other types of parental mediation. In terms of online activities, we found two statistically significant differences. First, a higher percentage of boys than girls reported visiting chat rooms and forums. This finding suggests that boys are more likely to be exposed to online risks, as chat rooms and forums are online spaces that involve interactions with strangers. Regarding injunctive norms, the boys reported that their friends were generally more supportive of taking risks online than girls. Finally, on average boys reported taking more risks online than girls.

3.2. Age, family concepts, exposure to online risk and risky online behavior

We also conducted an exploratory correlation analysis of the variables measuring family concepts in order to ensure that they did not result in multicollinearity. Table 2 presents the results of that analysis.

[INSERT TABLE 2 ABOUT HERE]

As the table demonstrates, the correlations between the family variables were not large and do not indicate any possibility of multicollinearity. The correlation matrix indicates a positive correlation between age and the number of risky online activities. The older the adolescent, the greater the number of such activities (r=.15, $p < 0.01$). As expected, online exposure was positively associated with the number of risky online activities reported. The more time online, the greater the participation in chat rooms (r=.26, $p \leq .001$), and use of IM (r=.18, $p \leq .001$), blogs (r=.17, $p \leq .001$) and forums (r=.19, $p \leq .001$), the greater the number of risky online activities reported.

Family cohesion had a negative effect on the number of risky online activities reported (r=-.31, $p < .001$), indicating that the closer the adolescent feels to his or her parents, the fewer the number of risky activities. Indeed, there was a correlation between all of the measures of parental mediation and the number of risky online activities. Parental guidance, meaning the extent to which parents provided help and information to their children about using the Internet safely, was negatively associated with the number of risky online activities reported (r=-15, $p \leq .001$).

On the other hand, supervision that took the form of installing software that blocks non-recommended sites and other tracking activities such as checking emails and Facebook profiles that represent unrequested surveillance of the youngsters' activities was positively related to involvement in risky online activities (r=.15, $p < .001$). In addition, the lack of parental mediation was positively related to risky online behavior. Interestingly, the relationship between parental guidance and parental supervision was positive (r=.36, $p \leq .001$). This finding suggests that parents who are heavily involved in and aware of the risks of the Internet use different methods of surveillance to protect their children when online. Exposure to risky activities was positively related to parental supervision (chat rooms r=.12, $p \leq .01$, IM r=.12, $p \leq$

.01, blogs r=.10, $p \leq .05$), indicating that parents who are aware of their children's Internet activities use surveillance in an attempt to control them.

Other important results are the correlation between the variables and friends` injunctive norms. The perception that one's friends approve of risky online behaviors is positively correlated with one's engaging in such activities (r=.36, $p < .001$). At the same time, it is interesting to note that friends' norms are negatively associated with family cohesion (r=-.31, $p < .001$). In other words, the results seem to indicate that peers' injunctive norms become more influential or salient for youngsters who report being less close to their parents.

3.3. The differential contribution of peers' norms and parental mediation

[INSERT TABLE 3 ABOUT HERE]

In order to test the study's hypotheses we conducted an OLS multivariate analysis. The multivariate findings are presented in three models. The first model presents the results for gender, age, time online, family cohesion and the various dimensions of parental mediation. In model 2 measures of online exposure were added, and in model 3 peers' injuctive norms were added to the previous variables.

Our first hypothesis expected that parental monitoring activities (e.g. actively seeking information about their children's online activities through technological and social means) would be positively related to the number of risky online activities. Our findings support H1. Parental mediation that is based on social and technological supervision of their children's activities online is positively associated with participation in risky online activities. This finding indicates that the more patents try to restrict their children's online activities, the greater the number of risky online activities, meaning that children find ways to bypass these obstacles. It is also possible that this finding indicates a deterioration in the parent-child relationship.

Next, we expected that the two other types of parental mediation--guidance and the lack of intervention--would be negatively associated with participation in risky online activities. The findings did not support this hypothesis, H2. Adolescents whose parents provide guidance or do not control their online activities are no more or less likely to engage in risky online activities than those parents do not provide guidance.

We then tested our hypothesis regarding the link between family cohesion and risky online activities. The findings provide strong support for our hypothesis H3. The greater the perception of closeness to parents, the less the involvement in risky online activities.

H4 expected a positive association between perceptions about peers' injuctive norms and participation in risky online activities. Here again, the findings support our hypothesis. While the effects of parental guidance and a lack of intervention were not statistically significant, the perception of peer norms that support involvement in risky behaviors was positively associated with involvement in such behaviors. Thus, consistent with the study's expectations, the injunctive norms of adolescents' peers have a significant influence on youngsters' risky behavior online.

In addition, as expected, the effect of gender is statistically significant. Boys are more likely than girls to engage in dangerous behaviors, and older students are more involved than young students in risky behaviors online. These results support H5 and H6. Finally, the findings also indicate that the greater the involvement of the students in online communication activities and the more frequently they use the Internet, the greater the number of risky online activities in which they become involved, thereby supporting H7. In sum, we can say that adolescent involvement in

risky online behaviors is best described by a model that includes the factors of gender, exposure to risk, family cohesion, parental mediation and peer norms.

4. Discussion

Previous studies have established that during adolescence two important social agents--parents and friends--can influence adolescents' risky behavior. However, to date, no studies have investigated their joint effect on the risky activities online in which adolescents may engage. Some have argued that parents and friends play opposite roles in producing undesirable outcomes. Parental mediation can reduce such behavior while the influence of friends can increase it (Guo & Nathanson, 2011; Nikken & De Graaf, 2012). Others found that restrictive parental mediation contributes to sexual experimentation among adolescent girls (Nikken & De Graaf, 2012). Our findings suggest that not all types of parental mediation are related to risky behavior online. The most interesting finding is that social and technical supervision by parents actually increase risky online activities. This finding provides support for the recent argument of family scholars that disaggregated the effect of parental monitoring from information solicitation from children. Consistent with their approach, excessive monitoring and control during adolescence might not protect children from participation in deviant behavior. Rather, here as elsewhere we found that disclosures made by children, a characteristic of families in which there is a high level of social cohesion, reduced the involvement of adolescents in risky online behaviors (Kerr et al., 2010).

One explanation for this finding might be that parents who have less influence and control over their adolescent children attempt to gain it by monitoring their children's behavior. However, during adolescence, when children are learning to separate from their parents and increase their participation in their peer groups with the goal of

becoming autonomous, the technical and social monitoring of their online activities leads to the opposite result. Teens might feel motivated to find ways to bypass the monitoring, resulting in the creation or exacerbation of existing conflicts between parents and children.

In addition, as expected and as found in other studies on cyberbullying and risky sexual behavior online, the injunctive norms of the adolescents' peers are the most influential factor in their risky online behavior (Baumgartner et al., 2010; Heirman & Walrave 2012). Our results indicate that teens who engage in risky online activities believe that their friends approve of such behavior. It is possible that adolescents involved in risky online behavior tend to justify their behavior by overestimating the norms of their peers. In this phenomenon known as the false-consensus effect, adolescents project their behavior onto their friends to normalize their own behavior (Baumgartner et al., 2010; Bauman & Ennett, 1996; Gerrard et al., 1996). Another explanation might be that positive peer norms are an attempt to reduce cognitive dissonance.

Social norms theory emphasizes the powerful impact of friends on adolescent behavior. Our findings confirm the strength of this influence and imply that the social norms theory is applicable to risky online behaviors. Given that our study is cross-sectional, we cannot speculate on causal relationships. Nevertheless, other studies have shown that perceptions of peer norms take precedence over risky online sexual behavior, not vice versa (Baumgartner et al., 2011). We can only assume that the same pattern is present in risky online activities. Future studies need to explore the causal relationships between these concepts.

Adolescence is characterized by the growing influence of the peer group and the reduced influence of parents. In the process of achieving autonomy, peers become the main reference group. Our findings support this approach and demonstrate the influence of peers on risky online behavior. When we consider the differential contribution of parents and peers' injunctive norms to involvement in risky activities online, it seems that the latter is the more influential, followed by the stable characteristics of the family-child attachment. Intrusive parental supervision of adolescents' online activities seems to be detrimental to controlling their participation in risky encounters online.

4.1. Limitations

The findings of this study should be considered in light of several limitations. First, this study was designed as a cross-sectional one and therefore does not allow us to infer causal associations. Longitudinal studies are needed to determine causality. Second, we assessed risky behavior online using only three measures: sending an insulting message, posting personal details and meeting face-to-face with a stranger met online. Although they provide a solid and reliable measure of the concept of risky online behavior, studies that broaden the measures will provide more information.

5. Conclusion

Despite its limitations, this study presents important and unique findings. The results indicate that youngsters who are involved in dangerous online behaviors are a distinct group with special characteristics. Typically, this group consists of older boys who make frequent use of platforms that facilitate communication with strangers, come from families with little cohesion, have parents who have little if any control over their children and have peers who support these behaviors. Such youngsters may

see themselves as adults, are looking for excitement and want to push the boundaries of acceptable behavior. Similarly, Mesch (2009) found that adolescents who frequently searched the Internet for pornographic content differ in many ways from those who use the Internet to search for information, and for social communication and entertainment purposes. Like the youngsters in our study, they tend to be boys with weak social ties and little family commitment. Future research should be directed to gathering information about the social and psychological characteristics of these adolescents.

Table 1. T-test statistics for gender differences

	Girls	Boys
Age	13.98	13.69
	(1.81)	(1.88)
Time online	126.37	131.63
	(93.90)	(93.81)
Family cohesion	.10	-.08
	(.91)	(1.06)
Parental mediation - supervision	1.14	1.21
	(1.50)	(1.57)
Parental mediation - guidance	3.62	2.85**
	(2.11)	(2.22)
Parental mediation – non-intervention	3.52	3.69
	(1.95)	(2.06)
Visiting chat rooms	.22	.42**
	(.41)	(.49)
Using instant messaging	.66	.70
	(.47)	(.45)
Reading/ writing blogs	.24	.17
	(.43)	(.38)
Participating in forums	.21	.36**
	(.41)	(.48)
Perceptions about friends' norms	-.14	.12**
	(.91)	(1.05)
Risky online behavior	-.22	.19**
	(.69)	(1.18)

*$p < .05$; **$p < .001$

Table 2. Correlation matrix variables in the analysis

	Risky online behavior	Gender	Age	Time online	Family cohesion	Chat rooms	IM	Blogs	Forums	Parental mediation - supervision	Parental mediation - guidance	Parental mediation – non-intervention	Friends' norms
Risky online behavior	1												
Gender	.20**	1											
Age	.15**	-.08	1										
Time online	.23**	.03	.12**	1									
Family cohesion	-.31**	-.09*	-.05	-.04	1								
Chat rooms	.26**	.21**	-.03	.12**	-.14**	1							
IM	.18**	.04	.18**	.24**	.06	.10*	1						
Blogs	.17**	-.08	.13**	.09*	-.07	.17**	.19**	1					
Forums	.19**	.17**	.07	.17**	-.10*	.31**	.19**	.31**	1				
Parental mediation - supervision	.15**	.02	-.11*	.03	-.04	.12**	.12**	.10*	.08	1			
Parental mediation - guidance	-.15**	-.18**	-.23**	-.06	.26**	-.09*	.06	.05	-.05	.36**	1		
Parental mediation – non-intervention	.10*	.04	.31**	.20**	.08	.01	.29**	.07	.12**	-.07	-.02	1	
Friends' norms	.36**	.14**	.11*	.11*	-.20**	.14**	.12**	.16**	.16**	-.04	-.22**	.02	1

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

Table 3. Multivariate regression –Risky online behavior (dependent variable)

Variables	*B*	*SE B*	*β*	R^2	ΔR^2
Block 1				.21	
Gender	.323	.083	.161***		
Age	.062	.024	.115**		
Time online	.002	.000	.181***		
Family cohesion	-.246	.040	-.257***		
Parental mediation – supervision	.111	.029	.171***		
Parental mediation - guidance	-.034	.021	-.074		
Parental mediation – non-intervention	.027	.022	.055		
Block 2				.25	.04***
Gender	.279	.084	.139***		
Age	.053	.024	.099*		
Time online	.002	.000	.146***		
Family cohesion	-.231	.040	-.241***		
Parental mediation - supervision	.087	.028	.134**		
Parental mediation - guidance	-.032	.021	-.071		
Parental mediation – non-intervention	.016	.022	.032		
Visiting chat rooms	.282	.091	.133**		
Using instant messaging	.174	.094	.081		
Reading/ writing blogs	.213	.106	.086*		
Participating in forums	.017	.097	.008		
Block 3				.30	.05***
Gender	.236	.082	.118**		
Age	.048	.023	.088*		
Time online	.001	.000	.134***		
Family cohesion	-.201	.039	-.210***		
Parental mediation - supervision	.091	.028	.139***		
Parental mediation - guidance	-.015	.021	-.033		
Parental mediation – non-intervention	.021	.021	.042		
Visiting chat rooms	.261	.088	.123**		
Using instant messaging	.126	.091	.058		
Reading/ writing blogs	.142	.103	.058		
Participating in forums	-.013	.094	-.006		
Perceptions about friends' norms	.243	.041	.243***		

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

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