

Challenging Online Behaviors of Youth

Findings From a Comparative Analysis of Young People in the United States and New Zealand

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Child-serving professionals have struggled to understand the often complex emotional and behavioral responses of children and youth who are immersed in interconnected environments and consumed by digital technologies. A comparative analysis on challenging online behaviors of adolescent girls in the United States and New Zealand was completed. Survey results confirm that when online, a significant number of adolescent girls are engaging in risky activities including disclosing personal information, sending personal photos to online acquaintances, and arranging face-to-face meetings. Many respondents continue potentially problematic offline practices as a result of these online interactions. The data also suggest that there is a lapse in preventative intervention to create and maintain awareness and safety for young people. Implications of this research for preparing youth to successfully harness the potential of the Internet are explored.

Keywords: child development; online behavior; cross-national analysis

The Internet has provided an expansive environment that has the potential to offer instantaneous interaction with people worldwide. As a result, cyberspace has become a venue for leisure and educational activities of many youth, offering new opportunities to enrich and extend life experiences. However, along with these enhancements come unanticipated costs that can detrimentally affect the lives of young people.

Youth in today's world do not merely consume information from the diverse media sources that are accessible online. Young people are active agents who can manipulate, adapt, create, and disseminate ideas and products through communication technologies. As mobile phones, personal digital assistants (PDAs), laptops with wireless computing, digital cameras, and digital videos figure more prominently in the list of readily available tools that are accessible to children and youth, technology has become increasingly demanding on the development of skills necessary for engagement in an environment that is not constrained by time or space. Within an interconnected environment, youth must struggle to assume a proactive role in exerting their voice and influence as they connect with others. These activities are driven not only by the technology, but also by the social context in which they exist.

Emerging technologies are designed to engage users in an active networked realm, thereby necessitating that technological competency include skills in communication and collaboration. This adds complexity to the demands of technology on the functioning of

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young people who must not only master the tasks required by the tools but must also simultaneously function as part of a networked group as it shapes the social space in which it resides. The permeation of the Internet into the lives of children and youth can expose them to information with questionable legitimacy, ideas that can be contrary to positive behaviors, and messages that are intended to manipulate their actions or beliefs (Berson, 2003a). Individual characteristics of young people can affect their readiness to participate in these social interactive experiences online (Berson, Berson, & Ferron, 2002).

A DEVELOPMENTAL FRAMEWORK

Developmentally, children typically do not begin attenuating to risk until middle childhood, thereby necessitating that adults serve critical protective roles. Even in the teen years, the ability to make informed life choices is still in a state of flux. Adolescents have often been described as particularly vulnerable to risky behavior including poor decision making, and several speculative theories have been explored to explain these actions. Some researchers have suggested that risk taking is (a) associated with personality traits (i.e., characteristics associated with sensation seeking and self-esteem) that disinhibit action by minimizing or distorting potential for harm (Zuckerman, 1979, 1994); (b) a learned behavior resulting from poor interactions in the family system (i.e., vulnerability as a function between the presence of risk and lack of protection; Jessor, 1992); (c) a developmental phenomenon in which lack of experience leads to an error of judgment regarding level of risk (i.e., part of typical exploration throughout the maturation process) or in which a youth's sense of invulnerability results in a failure to consider risk or the need to act in a deliberative way (i.e., specific to the egocentrism of adolescence; Greene, Krmar, Walters, Rubin, & Hale, 2000); and (d) a failure to categorize actions as falling within the moral domain of behavior so that personal gain is emphasized over safety for self and others (Willard, 2000).

Young people are often equipped with powerful technology that communicates through an enticing amalgamation of images, words, and sounds. However, multiple sensory inputs are demanding on cognitive resources and can overwhelm children's capacity to engage in thoughtful decision making (Andersen, 2002). As the digital environment continues to bombard the senses with rapid transmission of complex messages, the dazzle of cyberspace and wired communication can interfere with reasoned choice, placing young people in a state of imbalance for recognizing risk or responding to threats. The resulting overload can reduce the ability of youth to make sense of what is presented or to respond in a judicious manner (Berson, 2003b).

These findings are further exacerbated by research that notes that images that pervade digital messages elicit a response from the limbic system (Bergsma, 2002), the part of the brain that tends to be impulsive and emotional. Devoid of cues and the physiological hardware to initiate deliberate and thoughtful critical thinking, young people may act or react without reflection on the implication for self and others (Bergsma, 2002). As a result, adolescents typically underestimate the influence of digital technologies on their behavior and the potential for risk. Influences are especially powerful when youth cannot readily perceive potential threats nor access skills to create a barrier from harm (Berson & Berson, 2003).

In summary, modern technologies require young people to make sense of an overload of information. Despite the amplification of the quantity of data available, the nature of the sensory input restricts and often distorts the quality of visual and tactile cues, the primary modalities used by the brain to represent experience. Filled with superfluous data, virtual interactions provide limited access to the critical signals needed to differentiate safety from harm (Andersen, 2002). Moreover, without the biological structure necessary for deliberate

and thoughtful action, young people may impulsively act and react in cyberspace without forethought to the influence of powerful sensations and may be easily lured by the artificial distinctions between virtual encounters and real-life activity (Berson & Berson, 2003).

Based on findings from surveys conducted in the United States and New Zealand, this article explores challenging online behaviors that place young people at risk of harm, focusing on the commonality of experience among youth in a global context. Electronic communication has been used to bully, harass, threaten, and exploit victims (see Barak, this issue). As a new phenomenon, there is a paucity of research or models to predict the likelihood to engage in at-risk activities online that may be associated with subsequent violence and/or exploitation. Although many presume that a child who is linked to the Internet is safe under the protective refuge of their school or home, the potential risks online are comparable to the dangers noted in any expansive environment. The risks include exposure to threatening behaviors such as online stalking, obscene interactions including unsolicited exposure to pornographic material, spamming, flaming (online verbal abuse), hate speech, threats of violence, unwanted advances, consumer exploitation, and sexual predation. Exposure to Internet violence may also transcend into real-life abuse in which victims experience stalking, vandalism, threatening or obscene mail, physical assault, and sexual exploitation.

METHOD

Procedure

Comparative analyses were conducted with data gathered from online surveys that were completed by adolescent girls in the United States (Berson et al., 2002) and New Zealand (Internet Safety Group, 2001). Berson, Berson, and Aftab (1999) originally developed an online survey on Internet activity for adolescent girls, ages 12 to 18, that was hosted on the Internet site of a popular teen magazine, *Seventeen Magazine* (see Berson et al., 2002). Participants completed a 19-item questionnaire that included multiple-choice and open-ended questions. The questions had been piloted through surveys of middle school students in the United States. The online survey was developed using Macromedia *ColdFusion* software that allows online responses to be stored in a database. The data were then uploaded into a statistical software program for analysis.

Subsequent to release of the U.S. study results in 2000, the online survey was replicated by a child advocacy group in 2001 in New Zealand, a country that has implemented a national Internet safety initiative. Dr. Niki Harre, Dr. John Read, Pat Bullen, Mary-Rose Mahala, and Jennifer Hauraki of the Psychology Department at the University of Auckland refined the original U.S. survey, maintaining either identical questions or similar focuses with modifications in wording to accommodate regional differences. The survey was placed on a very popular web site for New Zealand adolescent girls, www.nzgirl.co.nz. The objectives of both research initiatives included the identification of online activities of children and youth that may contribute to risk of exploitation and abuse, discussion of the differential role of mediating factors in protecting young people's well-being in cyberspace, and a clarification of policies and practices that may contribute to safety for children online.

Participants

Because data from the National Center for Missing and Exploited Children (www.missingkids.org) had confirmed that adolescent girls were a particularly high-risk group for exploitation and victimization, the researchers opted to focus the study on the

Internet experiences of adolescent girls, aged 12 to 18. Both the U.S. and New Zealand studies selected web sites that had an established base of users who matched the targeted demographics to host the survey. No advertisement for the studies occurred so that self-selection of each site's typical users could be achieved. After removing surveys that were incomplete, surveys that were completed by individuals not targeted in the research, and multiple surveys that were submitted by the same source, the number of responses totaled 10,800 females for the U.S. sample and 347 females for the New Zealand sample.

Data analysis

Based on the results from the two online surveys of adolescent girls, the descriptive data were compared. A logistic regression model, based on the online data, also has been developed to assist in formulating a profile of risk for challenging behaviors among adolescent girls in cyberspace. Certain online activities (e.g., sharing personal information, engaging in threatening or sexually suggestive communication, meeting in the real world with online acquaintances) have been isolated as variables that contribute to greater potential for harm. Other factors including preventative activities (supervision, education, discussion) by significant adults (parents and teachers) were identified as potential mediators of risk. For purposes of this analysis, the log odds were modeled as a linear function of the predictors.

RESULTS

Demographics

Both the U.S. and New Zealand surveys elicited demographic information on age of the respondents (see Table 1). In the survey samples, the majority of participants were in the age group from 14 to 16 years old.

Online Habits

Among the U.S. survey participants, approximately 50% spent less than 6 hours online weekly compared to 44% of the New Zealand respondents. The percent of users online 6 to 9 hours per week was nearly identical for both groups; however, New Zealand girls exceeded their U.S. counterparts in the percent online for over 10 hours per week (33% vs. 27%). Both groups primarily accessed the Internet at home, and instant messaging was universally identified as the most popular activity.

Patterns of Interaction Online

The respondents in both surveys were asked to select activities from a continuum of online risks in which they have engaged (see Table 2). The at-risk activity of disclosing personal information was more prevalent among the U.S. respondents (59% vs. 34%), but actually meeting or agreeing to meet someone as a result of an online interaction was nearly twice as common among New Zealand girls compared to U.S. participants (24% vs. 12%). Both groups were equally prone to send pictures of themselves to someone they met on the Internet (approximately 25% of the respondents).

In both surveys, young people reported online interactions that reflected a dichotomy of experiences in cyberspace. On one hand, respondents described their online immersion into a culture of deception where activities involved the exchange of verbally harassing or sexu-

TABLE 1
Comparative Descriptive Statistics

<i>Question</i>	<i>Responses</i>	<i>U.S. Sample (%)</i>	<i>New Zealand Sample (%)</i>
Age of respondent (in years)	12	5.9	4.9
	13	16.5	14.4
	14	24.4	20.4
	15	23.6	21.8
	16	16.3	20.1
	17	9.9	11.1
	18	3.3	6.4
Average no. of hours online per week	0-2	19.6	16.9
	3-5	30.0	27.0
	6-9	23.9	23.3
	10-12	11.7	13.7
	> 12	14.9	19.1
Primary site for Internet access	Home	92.9	94.2
Most frequent online activity	Instant messaging	58.1	55.0

TABLE 2
Risky Behaviors Online

<i>Behavior</i>	<i>U.S. Sample (%)</i>	<i>New Zealand Sample (%)</i>
Gives out personal information via a form or questionnaire online	59.0	34.3
Sends picture of self at request of someone on the Internet	23.1	26.2
Has met in person with someone who is an online acquaintance	12.5	23.6

ally suggestive chat. In contrast, other young women used online dialogue as a way to empower themselves and to find a voice. Whereas many respondents perceived that superficial characteristics (body size, facial features) were judged as more important than personality in face-to-face interactions, these visual cues were typically not available during online exchanges. In cyberspace, the pressures to fit in and to act a certain way were moderated by the pseudoanonymity and perceived security of being protected behind the computer screen, often in the comfort and safety of one's home. Cyberspace provided girls with a context where they could shed their traditional expectations and explore alternative aspects of themselves.

Supervision of Online Activities

In both countries, the percentage of adults monitoring the use of the Internet was quite small (< 4%) and is a likely contributor to at-risk behavior among teens (see Table 3). When asked about discussing or reading about Internet safety, almost 16% more U.S. girls discussed these issues with a parent, guardian, or caregiver than did respondents from New Zealand (67.8% vs. 52%).

TABLE 3
Preventative Intervention

<i>Question</i>	<i>Responses</i>	<i>U.S. Sample (%)</i>	<i>New Zealand Sample (%)</i>
Frequency of adult supervision of online activity	Always	3.5	1.2
	On occasion	32.8	35.8
	Rarely	37.3	2.9
	Never	24.4	36.1
	Don't know	1.9	3.2
Sources of information on Internet safety	Parent, guardian, or caregiver	67.8	52.0
	Teacher	36.1	29.1
	Sibling	10.9	2.0
	Friends	26.6	27.0
	Media	< 1	43.9
	Web site	< 1	22.7
	No exposure	17.2	9.0

Comparable numbers of girls from each study engaged in discussions with teachers regarding appropriate use of digital technologies and resources in cyberspace (U.S. sample: 36.1%; New Zealand sample: 9.1%). Friends also contributed almost identical figures (U.S. sample: 26.6%; New Zealand sample: 27%), but there was a significant difference between the samples with regard to who discussed their online activities with their siblings (U.S. sample: 10.9%; New Zealand sample: 2%). A large difference was also evident among those respondents who reported that they had never received any instruction or information about Internet safety (U.S. sample: 17.2%; New Zealand sample: 9%).

Development of a Profile of Challenging Behaviors in Cyberspace

The outcome of agreeing to meet with someone as a result of an online encounter was modeled in a logistic regression. In the U.S. sample of 10,800 girls, 13% ($n = 1,360$) indicated that they agreed to a face-to-face meeting with an online acquaintance. The odds of this behavior occurring was .143. Comparatively, in the New Zealand sample of 344 girls, 24% ($n = 81$) indicated that they agreed to meet a stranger in person. The odds of this behavior occurring was .308, but for both samples the odds were unequal across groups.

Agreeing to meet a stranger may be a function of age. Based on the study results, as adolescent girls get older, the odds of agreeing to risky behavior increases, as 17- to 18-year-olds are almost four times more likely to meet a stranger than are 12- to 13-year-olds. When students who had personal contact with someone they met on the Internet were analyzed by age, 15- and 16-year-olds were found to be the most vulnerable. Almost 7% of the 16-year-olds and 6.7% of the 15-year-olds engaged in risky behavior. The 14- to 16-year-old age groups, with 62% of the population, accounted for 68% of the risks. By contrast the 12- to 13-year-olds, with 17% of the population, had only approximately 1% of the overall risky behavior.

An association also has been identified with time spent online and the probability of engaging in risky activities. As adolescent girls spend an increasing amount of time online,

TABLE 4
Logistic Regression Predicting Log Odds of Agreeing to Meet With a Stranger Based on Whether There Was Discussion With a Caregiver

	<i>Parameter</i>	<i>SE</i>	χ^2	<i>p Value</i>	<i>Adjusted Odds Ratio</i>
Intercept	-1.744	.0531	1,079.99	.0001	
U.S. parent ^a	-.5455	.1425	14.66	.0001	.580
New Zealand parent ^a	-.1685	.0706	5.70	.0169	.797

a. 1 = having a discussion; 0 = not having a discussion.

they are more likely to participate in destructive or potentially dangerous acts. This correlation was persistent across all assessed areas and suggests that Internet misconduct may become increasingly prevalent as youth expand their use of the Internet.

Similarly, the advice or counseling that the individual received may also influence agreeing to meet a stranger. An odds ratio calculation with the New Zealand sample indicated that of the girls who agreed to a face-to-face meeting with strangers, none had discussed Internet safety with parents or caregivers (see Table 4). On the other hand, adolescent girls who had a discussion with parents significantly reduced their odds of engaging in this potentially dangerous behavior. More specifically, New Zealand girls who had not discussed Internet safety with a parent or guardian were almost four times as likely to agree to meet with an Internet acquaintance. Among the U.S. sample, girls who had not addressed these issues with a caregiver were nearly six times more likely to engage in the behavior.

Based on a stepwise logistic regression, the results suggest that the dialogue with and monitoring by significant adults seem to make a difference for many young people. None of the teens who had a significant adult spend time with them while they surfed reported engaging in sexually explicit exchanges online and other potentially unsafe behavior, whereas almost 60% of the adolescents in general reported experiences with at-risk behaviors. There was a significant inverse interaction among direct supervision, periodic monitoring, and ongoing discussions with adults that was associated with a decreased tendency to engage in Internet activities (i.e., disclosing personal information, real-life meetings, sharing photos, exposure to threatening messages) that may lead to potential harm.

DISCUSSION

Limitations

Because this ongoing study is based on a secondary analysis of existing data sets, there are limits to the detail available and the veracity of the information on specific characteristics of risk and preventative intervention. A measure of the severity of risk also would be valuable in further developing the model of challenging behavior. In addition, the generalizability of the study results to youth of other cultures may be limited because the data may not represent the experiences of all adolescent girls. Despite these limitations, an important inverse association between challenging online activity and mediating interventions to foster safety in cyberspace justifies future research endeavors aimed at clarifying the effectiveness of preventative intervention in moderating the effects of at-risk activities as well as the differential effects of multiple factors for risk in online environments.

Preventative Intervention for Responsible Choice and Prosocial Skills in a Digital World

The Internet is accessible and popular among youth, and evidence is suggesting that people often make online choices that are contrary to their real-world behaviors (Miller, 1999). This phenomenon has broadened the opportunity to engage in violent and abusive behaviors and has dramatically increased the access of potential offenders to a more expansive pool of victims (Federal Bureau of Investigation, 2002).

Research has revealed that the Internet is not strictly an intellectual activity, but rather it has behavioral repercussions and emotional implications (Berson et al., 2002). Although the Internet is increasingly a point of social contact for adolescents who may prefer the perceived anonymity of Internet relationships, electronic communication also has been used to bully, harass, threaten, and exploit victims. As young people spend increased amounts of time online, there is increased risk for exposure to violence and/or exploitation (Cole et al., 2001).

Identity deception is an inherent part of online communication (Turkle, 1995), and transformations can have positive and negative repercussions for youth who also experiment with self-constructed and fluid identity online (Gurak, 2001; McKenna & Bargh, 2000; O'Connell, 2001). The deindividuation that occurs online is associated with a tendency to diminish self-regulation and to engage in disinhibited behavior (Joinson, 1998). There is an increased likelihood of nonconforming or aggressive interaction, but there is also a tendency to share more intimate disclosures (McKenna & Bargh, 2000).

The lack of affective feedback and remoteness from the impact of harm, the reduced fear of punishment, the disregard of existing rules in the new context of cyberspace, and the perception of pervasive corruption online contribute to poor decision making (Willard, 2003). Furthermore, continuously accessible environments with wireless technologies, handheld computers, and mobile phones provide growing temptations for misuse, including cheating, plagiarism, and bullying with digital devices.

In conjunction with early preparatory experiences that engage a child in assessing risky situations, developing appropriate coping techniques, and practicing responses to problematic situations, children can be adequately prepared for our media-saturated culture. This approach is based on findings that many youth are unlikely to heed simplistic cautions and authoritative rules (Williams, 2001). Instead, comprehensive education for safety awareness needs to be introduced as part of a broader Internet safety program (Williams, 2000).

The resulting understanding of risk and intervention that has emanated from this comparative U.S. and New Zealand research is being applied to the development of Internet safety interventions and public policy through cross-national collaborative efforts. To improve children's ability to avoid violent situations and to demonstrate prosocial decision making, they need instruction in interpreting behavioral cues and improving their conflict resolution skills (Nadel, Spellman, Alvarez-Canino, Lausell-Bryant, & Landsberg, 1996). In addition, harm avoidance can be best achieved when sensation-seeking behaviors are minimized (Levenson, Kiehl, & Fitzpatrick, 1995). Because clues that would typically lead to a prosocial response are limited in cyberspace, and because fear of repercussions is diminished, it is necessary to enhance the effectiveness of the cognitive component of empathy through prevention programs designed to safeguard youth online (Willard, 2003). Raising the sensitivity of young people to how their online communications may impact others appears to be an essential component of educational programs to prevent harmful online communication.

Effective Internet awareness, digital literacy, and Internet safety necessitate much more than simple replication of personal safety programs within a computer interface. Successful

initiatives are not just a mere amplification of awareness training on what is undesirable or frightening in cyberspace. The future of our efforts are still unfolding. However, it is clear that our success depends on our ability to engage youth in making sense of their experience in cyberspace through more expansive ways of thinking about the sensory data available to us.

Digital communication is integrally connected with global understanding, multicultural respect, diversity, and tolerance (Berson & Berson, 2003). Internet literacy requires a continuum of skills such as constructing messages, interpreting perspectives, and responding to attempts by others to influence one's responses and actions. However, young people are especially prone to misperceive communications in a digital environment, failing to understand the nuances of perspectives and opinions shared.

We cannot help our youth to achieve competency with digital technologies through rote learning of basic rules or amid filtered environments that set up conditions that fail to optimize use of their intellectual capital. Young people need opportunities to create, test, and revise their constructs about online environments. The optimal structure will enable them to build their skills through a carefully crafted learning environment that supports them in this endeavor. This refinement of capabilities is best suited in a context of discussion, debate, and active engagement.

Concluding Thoughts

Information resources have become central rather than peripheral in the day-to-day functioning of youth. Yet while living within a media-saturated world, young people often rely on skills that facilitate the passive absorption of information. Conversely, immersion into an information-rich society necessitates deeper reflection; understanding of point of view; identification of interests and motivations that are represented; sensitivity to how we respond to the form or presentation of messages; and discernment of the accuracy, balance, or distortion of information presented.

Prevention initiatives for Internet safety and digital literacy can be strengthened when based on a developmental and research framework. To optimize the opportunity to refine behavioral control in digital environments and to foster critical decision making, it is essential to build on the existing skills of youth so that they can acquire the capacity to decipher complex messages in an informed and knowledgeable way and, thereby, counteract the temptation to react without forethought to the influence of powerful words, images, and sounds.

The challenge of identifying the most salient protective factors to safeguard youth not only for the technology that they encounter today but also for the future innovations that we have not yet imagined serves as a beacon to guide us into exploring new directions. Reconceptualizing our existing knowledge and applying new ideas to these efforts offers the opportunity to expand the ability of young people to think and learn on a social and sensory level.

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