

**ORIGINAL RESEARCH**

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# Online Social Networking Patterns Among Adolescents, Young Adults, and Sexual Offenders

A SURVEY FINDS A TROUBLING OVERLAP OF INTERNET HABITS AMONG PREDATORS AND THEIR POTENTIAL VICTIMS.

**D**uring the mid-1970s, individual computers began to be linked electronically for the sake of computer-mediated scientific collaboration, social interaction, and networking. More recently, the availability and use of the Internet has become nearly universal in many countries. By 2010 there had been an explosion of social networking sites serving a wide variety of interests and individuals. The majority of today's youth are using the Internet as a medium for social interaction, research, sharing ideas and photography, artistic creation, schoolwork, journaling, or blogging.<sup>1,3</sup> At the same time, they are being exposed through the Internet to a variety of sexual and violent material, financial scams, cyberbullying, harassment, and the solicitations of predators.<sup>1,3,4</sup>

Risky online behaviors often cluster in individuals and may include posting or sharing personal information (name of school, e-mail address, personal photographs), corresponding online with an unknown person and in some cases meeting off-line, cyberbullying or harassment, visiting sex sites, and overriding Internet filters or blocks.<sup>3,5-7</sup> By 2006 more than 90% of American teenagers (ages 12 to 17) were using the Internet, with 55% of online adolescents reporting that they spent time at a social networking site such as Facebook or Myspace and had at least one profile on such a site.<sup>1</sup>

Although social networks may encourage positive relationships and the sharing of content, we've also

come to recognize that the technology revolution has opened up a seemingly limitless world of unmediated information and can be a powerful tool for the commission of crime. Sexual predators are increasingly using the Internet to lure, solicit, and sexually exploit children.<sup>4,8</sup> "Self-exploitation," the creation and distribution of explicit or inappropriate pictures of oneself or one's peers, is another emerging high-risk behavior. National and local news stations are reporting numerous stories of teens who are taking nude photos of themselves or others and sharing them on their cell phones or posting them online. This practice, now known as "sexting," can also involve teens in the acts of undressing each other, touching each other, or having sex. Sexting and other self-exploitative behaviors are becoming increasingly popular, with one 2008 survey finding that 20% of teenagers admitted to sending or posting nude or seminude photos of themselves and 40% of teens and young adults reported having been shown a sexually suggestive message originally meant for someone else.<sup>9</sup> The consequences of creating, sharing, or possessing such photos can include legal charges related to child pornography or indecent exposure and the possibility of such photos ending up in the hands of child predators.

Most studies of Internet behaviors found in the literature have examined the topic of risk-taking behaviors among adolescents, youths, and adults in the areas of bullying, sexual harassment, sexual solicitation, and meeting dangerous people. Our study sought

## ABSTRACT

**Objective:** The use of online social networks like Facebook continues to increase rapidly among all age groups and segments of our society, presenting new opportunities for the exchange of sexual information as well as for potentially unsafe encounters between predators and the vulnerable or young. This study surveyed middle school, high school, and college-age students, as well as sexual offenders, regarding their use of social networking sites in order to provide information to better focus education and prevention efforts from nurses and other health care providers.

**Methods:** Written questionnaires asking about various characteristics of participants' use of social networking sites were distributed to each group and filled out by 404 middle school students, 2,077 high school students, 1,284 students drawn from five traditional four-year colleges, and 466 adults who had committed either an Internet sexual offense or a hands-on sexual offense (in some cases both).

**Results:** Notable findings emerging from our analysis of the questionnaire responses included the following: offenders and students both frequent social networking sites, although at the time of the study offenders reported that they preferred Myspace and students that they preferred Facebook; nearly two-thirds of the Internet offenders said they'd initiated the

topic of sex in their first chat session; more than half of the Internet offenders disguised their identity when online; most Internet offenders we surveyed said they preferred communicating with teenage girls rather than teenage boys; high school students' experience with "sexting" (sharing nude photos of themselves or others on cell phones or online) differed significantly according to their sex; a small number of students are being threatened and assaulted by people they meet online; avatar sites such as Second Life were used both by students and offenders, with both child molesters and Internet offenders expressing interest in Second Life.

**Conclusions:** The use of the Internet presents relatively new and complex issues related to the safety and privacy of adolescents and young adults, and it's crucial that our understanding keep pace with these changes. Possible nurse-initiated policy recommendations include designing technologies and educational programs to help in the identification of suspicious online behaviors; strengthening Internet filters and privacy options for protecting students online; and school outreach for students who are harassed, threatened, or assaulted as a consequence of meeting someone online.

**Keywords:** assault, avatars, communication, Internet risk behaviors, sexting, sexuality, sexual offenders, social media, social networking sites, youth

to ask questions about the Internet patterns and behaviors in "normal" populations as well as among Internet offenders who had been convicted of crimes related to their online behaviors. We introduced a developmental theme by asking a large number of middle school students, high school students, college students, and adult Internet and non-Internet sexual offenders to complete a questionnaire that contained questions about daily Internet use and risk-taking behaviors. We sought to gather information on students' and offenders' levels of engagement with social networking sites on the Internet as well as the roles played by Internet use in any would-be or actual in-person victimization. Our goal was to report basic social networking patterns among students and adult offenders as background information for health care professionals, especially school nurses, pediatric nurses, psychiatric nurses, forensic nurses, and many others who come in contact with young people.

## METHODS

Data were collected from 2008 through 2009. The self-report questionnaires were designed to capture responses to as many identical or similar questions about social networking and Internet use from the students and adult Internet offenders. All questionnaires were

given in person as paper-and-pencil instruments. Internet offenders were given the choice of having each question read aloud, but none chose that option.

For the middle school and high school samples, each student who had a completed parent consent form and a completed student assent form was given a questionnaire. The questionnaire included a consent paragraph informing students that all answers were anonymous and that they didn't have to answer any questions that made them feel uncomfortable.

College students were given questionnaires during a single class period. Although parental consent wasn't required, the college students were given a consent form and a questionnaire. All participating students were also offered extra credit in the course. (All students who came to the front of the room to obtain a survey returned a completed survey.)

Incarcerated offenders behaved differently from those in the community. The offenders in prison were invited to a session to discuss the project, consent, and the questionnaire. At the end of the information session, many chose not to participate and left the room. There are no numbers at this time of how many attended the information sessions, how many left, and how many stayed. Many of the community offenders were identified through clinician caseloads, and again

no data are available regarding the number of offenders who were asked to complete the questionnaire and how many refused or agreed to do so.

All information was reported anonymously, and no identifying information was requested. Survey questions focused on the frequency with which and the ways in which chat rooms and social networking sites were used by all groups of students and offenders, as well as just high school students' experience with and knowledge of sexting (the practice was not yet widely known at the time some of the groups were surveyed).

**Consent.** Prior to the beginning of data collection, permission to conduct this research was obtained from the first and second authors' universities as well as the institutional review board of each college, prison, and community treatment facility. We held a formal meeting with each middle and high school's principal to review the details of the study, including informed consent, student confidentiality, and the particulars of the questions included in the study. An information sheet describing the purpose of the study and an informed consent form were sent home to all parents

**TABLE 1.** Demographics

Middle School Students (n = 404)	Male (n = 192)	Female (n = 212)	College Students (n = 1,284)	Male (n = 595)	Female (n = 689)
<b>Age</b>			<b>Age</b>		
Mean (SD)	13.60 (1)	13.48 (0.98)	Mean (SD)	20 (3)	21 (3)
Range	9–15	11–15	Range	17–58	17–55
<b>Race, %</b>			<b>Year in college, %</b>		
White	87	88.8	Freshman	36.1	32.9
African American, black	3.6	3.3	Sophomore	16.3	13.5
Hispanic	0	0.9	Junior	14.4	20.3
Other	9.4	7	Senior	31.4	29.4
<b>Grade, %</b>			Graduate student	1.8	3.9
6th	37.2	35.9	<b>Race, %</b>		
7th	29.3	32.5	White	66.1	62.9
8th	33.5	31.6	African American, black	4.9	8.2
<b>Type of school, %</b>			Hispanic	8.8	13.2
Public	62	59.5	Asian	12.2	8.2
Parochial	38	40.5	Native American	0.2	0.4
<b>High School Students (n = 2,077)</b>			Indian	2	1.6
<b>Age</b>			Arab	1.4	0.6
Mean (SD)	16.03 (1.28)	15.93 (1.25)	Other, biracial, mixed, unclear	4.4	4.9
Range	13–20	13–19	<b>Online Internet Sexual Offenders (n = 113)<sup>b</sup></b>		
<b>Race, %<sup>a</sup></b>			<b>Age</b>		
White	74.6	76.7	Mean (SD)	40.85 (12.69)	
African American, black	7.9	8	Range	19–73	
Hispanic	2.5	1.8	<b>Highest grade level completed, %<sup>a</sup></b>		
Asian	8.1	7.7	No high school diploma	1.8	
Native American	0.6	0.1	High school diploma	20.4	
Indian	1	0.5	Some college	31	
Arab	0.8	0.6	Associate's degree	14.2	
Other, biracial, mixed	4.5	4.5	Bachelor's degree	20.4	
<b>Grade, %</b>			Master's degree	9.7	
9th (freshman)	27.4	27.6	Doctoral degree	2.7	
10th (sophomore)	22.5	21.2	<b>Race, %<sup>a</sup></b>		
11th (junior)	21.8	24.6	White	92.9	
12th (senior)	28.3	26.6	African American, black	2.7	
<b>Type of school, %<sup>a</sup></b>			Hispanic	1.8	
Public	99.3	82.1	Asian	0.9	
Private	0.4	1	Native American	0.9	
Private Religious	0	16.7	Indian	0	
Other	0.2	0.2	Arab	0	
			Other, biracial, mixed, unclear	0.9	

<sup>a</sup> Percentages may not sum to 100 because of rounding.

<sup>b</sup> All offenders were male.

with an explanation of the purpose of the study. Signed consent forms were required from both parent and child before a student was allowed to participate in the study. College students were provided written information on the study, instructed to read the consent form, and required to sign the form if they wished to participate. Offenders were also provided both written and oral explanation of the study, read aloud the consent form, and required to sign it if they wished to complete the anonymous survey.

**Middle school students.** There were 404 students (ages nine to 15) recruited from one public and one parochial middle school in 2008; both schools were located in a suburban area of the same Northeastern state. There were no statistically significant differences between parochial and public school students in terms of their answers regarding Internet use, knowledge, and risk taking. The students were all asked to complete a modified version of the Youth Internet Safety Survey (YISS), which in its original form is a telephone survey. The YISS was adapted for paper-and-pencil administration by eliminating open-ended questions.<sup>10</sup> Questions addressing health risk behavior—specifically, six asking about cigarette use, seven on alcohol use, and seven on intentional and unintentional injury—were also incorporated into the questionnaire. The health risk behavior questions came from the Youth Risk Behavior Surveillance Survey (YRBSS), which was developed by the Centers for Disease Control and Prevention.<sup>11</sup> A sociodemographic data sheet was also used to collect basic information from students, such as age, ethnicity, and family background (see Table 1). For all middle school students, the survey for this study was administered during one 45-minute morning class period.

**High school students.** A survey was given in 2009 to 2,077 high school students (ages 15 to 18) from grades nine through 12. These students were from high schools located in a suburb of Philadelphia, a suburb of Boston, and an area in southern Maryland. The survey included a version of the YISS modified for paper-and-pencil administration, questions derived from the YRBSS addressing health risk behavior, and additional questions extrapolated from the questionnaires used with college students and Internet offenders.

**College students.** A similar questionnaire for college students was developed and administered in 2008–2009. This sample included 1,284 students drawn from five universities, public and private, with an approximately equal number of male and female participants. In most instances, completion of the questionnaire took less than an hour; it was emphasized that we were only interested in their honest responses.

**Sexual offenders.** A survey instrument was administered in 2008–2009 to a diverse group of adult offenders ( $n = 466$ ), defined primarily by sexual offense conviction (Internet, hands-on, or both), as well as Internet experience. Offenders were all men and

were drawn from state prison populations in the Northeast and from the community (primarily men assigned to treatment groups after release), private clinician caseloads of offenders released into community settings, and a small group from Canada. We compared self-reported hands-on sexual offenders with those who had been arrested for or charged with an Internet sexual offense.

## RESULTS

**Use of social networking.** *Middle school students* in the survey were asked about their online behaviors. The majority reported using their home computers to visit Web sites (boys, 94.9%; girls, 94.4%), engage in instant messaging (boys, 72%; girls, 84%), work on homework (boys, 91.5%; girls, 97.6%), and play online games (boys, 94.9%; girls, 87.2%). In response to a series of questions asking about high-risk Internet behaviors, both boys (31.1%) and girls (27%) reported posting personal information online, with 20.3% sharing their e-mail address and 20% posting

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pictures of themselves on their social network profile.<sup>6</sup> When asked if they'd posted a "rude or nasty comment" online about someone they knew, 29.5% of boys and 27.8% of girls reported having done so; a smaller percentage reported intentional use of the Internet to harass or embarrass another person. Additionally, a small group of students (59 out of 404) reported chatting online with strangers; girls (17.9%) were more likely to have done so than were boys (11.1%), and older students more likely than younger students (23% of eighth graders, 11% of seventh graders, and 10.5% of sixth graders).<sup>12</sup> Middle school students who reported posting their picture online—the specific question was, "In the past year, have you posted a picture of yourself on the Internet where anyone online can see it, like on a personal Web page or at a Web site?"—were more likely to have sent their picture electronically to someone, made "rude" or "nasty" comments to others, played online jokes, "harass[ed] or embarrass[ed] someone," or sought out pornographic sites.

*High school students.* The majority (88%) of the 2,077 high school students in the study reported using social networking sites. The most popular site was Facebook (68.5%), followed by Myspace (13%) and

Twitter (0.2%). Girls reported using social networking sites more often than did boys (91.1% versus 84.1%). However, more girls (81.4%) than boys (61.6%) reported using a privacy setting on their social network accounts that made their pages available only to those they had “friended” at the site. Additionally, when asked how many Web sites they’d visited in the previous six months and then to list those sites, girls reported having visited a greater number of Web sites (26) than did boys (17). As expected, seniors reported visiting the greatest number of social networking sites or other types of Web sites (19), followed by juniors (18); freshmen reported having visited one more site than did sophomores (10 versus nine, respectively).

*College students.* Almost all college students reported using social networking sites (91.4%), with Facebook the most popular at 49.1%, versus 3.6% for Myspace and less than 1% for Twitter. Female college students reported visiting a greater number of Web sites (15) than did their male counterparts (three). Overall, juniors visited 14 sites on average, seniors and freshmen visited seven, and sophomores visited four.

*Sexual offenders.* The 466 adult offenders in this sample were classified according to where the offender was living (in the community or incarcerated) at the time of data collection. The offenders were also divided into subgroups according to self-reported type of sexual

offense conviction. There were 113 men classified as Internet offenders and 353 classified as non-Internet offenders. The Internet offender group included men who reported only an Internet-related sexual offense, such as possessing or transmitting child pornography or soliciting a minor over the Internet. The non-Internet group was composed of men who reported a conviction for a sexual offense that was not Internet related, including child molestation (n = 236), rape (n = 35), miscellaneous sex offenses (not child molestation or rape; mostly indecent exposure or voyeurism [being a Peeping Tom]; n = 27), or generic offenses (no known offenses against children; n = 55). Sixty of the 236 child molesters had both an Internet sexual offense and a hands-on sexual offense.

All offenders were asked about using social networks. The most popular site among those who reported using one was Myspace (n = 76); 11 reported using Facebook, 13 said they had used both sites, and 19 reported using other social networking sites. However, 347 (74.5%) of the 466 offenders didn’t answer the question about their use of social networks, even though “none used” was an answer option. These cases were coded as “missing.” Of sexual offenders who did respond, those who were currently incarcerated reported having used Myspace 35 to one over Facebook.

**Teen chat rooms.** *Middle school students* were asked about visiting age-appropriate chat rooms and their behaviors in them (see Table 2). These students identified online teen chat rooms as a place to meet other teenagers, chat, and share ideas. Students were also asked whether they’d been in an open chat room (one that was not private). One-third (33.3%) of the boys and 12.5% of the girls reported visiting open chat rooms. The students were then asked what age the open chat room they’d visited was intended for; the most common response for both the boys (52.3%) and the girls (50%) was that the room was intended for teenagers. (Only one boy responded that he’d been to an open chat room intended for adults.) Of the 59 middle school students who reported chatting with strangers online, almost half (49.2%) shared that they’d met the stranger in an online chat room. Thirty-two students reported that they’d also met this individual for an off-line, in-person meeting, and three reported being sexually assaulted or inappropriately touched.

*High school students* also reported using chat rooms (girls, 42.1%; boys, 41.6%). The majority of the girls responded that they’d visited chat rooms with teenage boys (35.2%) or teenage girls (43.6%). Of the boys who’d visited chat rooms, 32.6% said they’d chatted with other teenage boys and 24.7% said they’d chatted with teenage girls. A small percentage of high school boys (1.7%) reported that they’d chatted with older women in a chat room (compared with just 0.1% of girls who reported this).

**TABLE 2.** Percentages Using Chat Rooms

Middle School Students	Male	Female
Use of teen chat rooms	30.5	32.8
Open chat rooms (those without age restrictions)	33.3	12.5
Chatting with		
Other children (mixed sex)	12.9	8.3
Preteens (mixed sex)	22.6	25
Teens (mixed sex)	54.8	50
High School Students	Male	Female
Use of chat rooms	41.6	42.1
Chatting with		
Teenage boys	32.6	35.2
Teenage girls	24.7	43.6
Older women	1.7	0.1
College Students	Male	Female
Use of age-appropriate chat rooms	26.7	49.6
Use of child or teen chat rooms	0.2	1.1
Online Internet Sexual Offenders <sup>a</sup>		
Use of age-appropriate chat rooms	57	
Use of child or teen chat rooms	28.9	
Chatting with		
Preteen boys	0.9	
Teenage boys	2.6	
Preteen girls	1.8	
Teenage girls	21.1	

<sup>a</sup> All offenders were male.

Students were also asked whether they'd met a stranger online and to explain where on the Internet they'd first met this person. More than a third (33.6%) of high school girls reported that they'd met the stranger on a specific Web page or site; 20% said they'd done so through instant messaging, and just 6.4% reported doing so in a chat room. Boys met online strangers on a specific Web page or site (12.8%), through using instant messaging (20%), or in a chat room (11.3%). Of the 926 high school boys surveyed, a total of 146 answered questions about meeting an online stranger; of these, 51 (34.9%) reported meeting off-line with a stranger they'd met online, 33 (22.6%) reported that "something sexual" (consensual) happened at the meeting, and 10 (6.8%) reported being threatened or sexually assaulted as a result of the meeting. Of the 1,151 high school girls surveyed, 157 responded to questions about meeting an online stranger: 58 (36.9%) reported subsequently meeting off-line with the stranger, 21 (13.4%) reported something sexual happening at the meeting, and seven (4.5%) reported being threatened or sexually assaulted as a result of the meeting.

Among college students, only 1.1% of girls and 0.2% of boys reported visiting child or teen chat rooms, although 26.7% of male and 49.6% of female college students had used age-appropriate chat rooms.

Sexual offenders also reported accessing teen chat rooms: 41.7% of those who were both Internet offenders and child molesters visited teen chat rooms, followed by 28.9% of those who were Internet offenders only and 12.8% of those who were child molesters only. Just 29.4% of the Internet-only offenders who entered chat rooms identified themselves honestly, whereas more than half (58.8%) disguised their identity by name or age, and the remaining 11.8% reported having varied their means of identification (that is, having sometimes used a real name and age and sometimes lied about these). Those who were both Internet offenders and child molesters were equally divided into those who identified themselves and those who disguised themselves (48.3%), with only one offender doing both. In the child molester-only group, 62.5% used their true identity, whereas 37.5% disguised themselves, usually by age. Offenders were also asked whether they preferred chatting with boys or girls. All offender groups had a high preference for chatting with teenage girls.

**Online sex talk.** Offenders were asked how quickly the topic of sex was brought up when they were online. Among Internet offenders, 63.3% reported that they'd initiated the topic of sex in their first chat session, 20% that they'd done so in sessions two through six, and 16.7% that they took seven or more sessions to raise the issue.

Not surprisingly, middle school students and high school students reported lower levels of "sex talk" when online than did the offender groups. Among middle school students, 22.3% of boys said they were

likely to seek out the topic of sex online, compared with 6.1% of the girls. Boys were also more likely to have been exposed to sexual talk (17.6%) than were girls (14.7%); however, 8.5% of both boys and girls reported that someone had encouraged them to talk about sex when online.

In the high school sample, 7.4% of girls reported that someone had raised the topic of sex with them online even though they didn't want to discuss it, whereas 4.3% of boys had experienced this. High school boys were, however, more likely than girls to report having accessed an inappropriate Web site or chat room (43.8% versus 9.2%, respectively).

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**Fifty percent of the high school students knew about sexting, with 15.2% reporting that they'd been sexted.**

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**Sexting.** Only the high school group was asked about sexting knowledge and behavior. Fifty percent of the high school students knew about sexting, with 15.2% reporting that they'd been sexted and almost one-third (32.4%) stating that they knew someone who'd taken part in sexting. More than half (56.7%) of the girls said they knew about sexting, compared with fewer than half (46.9%) of the boys; however, whereas 13.4% of the girls had been sexted, 17.6% of the boys reported having been sexted. More girls (34.3%) knew someone who'd been sexted than did boys (29.9%). Although more private school students (75%) than public school students (50%) knew about sexting, more public school students (16.3%) than private school students (5.9%) had been sexted—with more equivalent numbers of public school students (32.1%) and private school students (35.3%) saying they knew someone who'd been sexted.

**Online avatars.** Only middle school students weren't asked about using an avatar-only Web site. (For this study, an avatar was defined as a three-dimensional, computer-generated figure or object chosen by a user to represent herself or himself online in a virtual world or game.) In the high school sample, 6.2% of students (77 boys and 52 girls) reported having used avatars on the Second Life Web site. Among college students, only 3.6% had used avatars on Second Life (25 male and 21 female respondents). Among offenders, 8.5% reported having experience with online avatars on Second Life, with 7.2% of incarcerated offenders saying that they'd used avatars at Second Life and 10.1% of offenders living in the community reporting that they'd done so.

## DISCUSSION

Nurses can provide evidence-based information to students and parents regarding some of the dangers of Internet use and social networking. Today, the easiest way for an offender to meet and engage a child or teen for the purpose of sexual abuse, pornography, or prostitution is through the Internet. Key findings from this study include the following:

- Sexual offenders and students frequent similar social network sites, with offenders preferring Myspace and students preferring Facebook.
- Nearly two-thirds of Internet offenders say that they initiate the topic of sex in their first chat session.
- More than half of the Internet offenders say that they disguise their identity when online.
- The majority of Internet offenders prefer communicating with teenage girls rather than boys.
- High school students' experience with sexting differs significantly by sex and according to type and location of school.
- A small percentage of students have been threatened or assaulted by people they met online.
- Avatars are used by both students and Internet offenders; however, during the time of data collection, students were using them more often than were offenders.

**Social networking sites** are increasing in popularity and use among all groups in this study. Because of their size and popularity, such sites constitute “target rich” environments for Internet-based predators. In this way they resemble real world environments that also attract child molesters and other predators, such as schools, youth athletics, video gaming arcades, and popular youth activity and membership organizations. It's therefore crucial to build into social networking sites the same types of safeguards that can be found in well-run youth-centered organizations: adult supervision; mechanisms allowing adults to monitor relationships and activities; and limits on who the children and teens can interact with, both on the Internet and in person.

Rather than assuming that students are visiting only the most popular Web sites, parents and responsible adults must become familiar with how children in their care are actually using the Internet. Nearly 30% of college and high school students reported visiting or using social networking sites other than Myspace and Facebook—and of those offenders who provided information, 33.9% said they'd also used other social networking sites. There are less well-known sites where predators may lurk, and asking students about their use of social networking and their favorite Web sites—in addition to using open-ended questions about their and others' online behavior—can provide insight into risk taking or areas for further education.

The adolescent and college-age students in our study reported using higher numbers of social networking

Web sites than did respondents in the offender group. The act of searching out various social networking sites can be a manifestation of adolescents' developmental level, one in which experimentation can play a big role in defining oneself, developing autonomy, and fitting in with peers.

Nurses should stay familiar with advances in technology and their impact on childhood and adolescent online behaviors. Nurses and other professionals who are working with youths at schools, in the community, and in inpatient or outpatient settings are in a unique position to help adolescents and their families develop safe Internet behaviors. In particular, they can ask assessment questions that focus on risky behaviors and Internet use, much in the way that nurses now screen for health risk behaviors, such as smoking and drinking, in this population.

**Emerging issues.** Advances in social networking, technology, and Internet access are likely to lead to debate and changes in legislation defining criminal activity. High school and college students in this study were very aware of sexting, and students are likely to be more so with each passing year, as is evidenced by an increasing number of high-profile cases in the news. Two recent cases illustrate the potential diversity of offenders and victims in this new world.

One case in western Pennsylvania, reported in January 2009, involved child pornography charges against three teenage girls who sent nude or seminude cell phone pictures of themselves and three male classmates who received them.<sup>13</sup> Police learned about the photos when a high school student had a phone turned on in class, a violation of school policy, which prompted an administrator to confiscate the phone and subsequently find the pictures.

The second case, which sparked considerable debate among the authors of this study, was that of a 15-year-old girl who created an avatar on Second Life to perform lap dances. (The case was brought to our attention by law enforcement representatives; the girl was not charged with a crime.) The avatar, which was provocatively dressed, identified as being 15 years old, and charged \$45 per 30-minute lap dance, was quite popular and easy to find; she was “paid” by customers (all men) in a virtual currency called “Linden Dollars,” which were placed into her Second Life account through a real credit card charge and subsequently cashed out as real money. The avatar's creator explained her business venture by arguing that she could make more money using an avatar than she could through babysitting. Our own debate focused on whether or not she was being victimized by her customers even though she wasn't a “hands-on victim.” In the current study, the most popular avatar-only site used was Second Life; the highest percentage of those using Second Life and avatars was among high school students.

Interacting online with the use of avatars or online personas may in some cases come to complement or

supplant in-person Internet offenses. The legal, moral, and practical implications of such shifts in offender behavior are still very much undetermined.

**Policy implications.** Legislators, law enforcement officers, and government officials continue to face public demands to increase protection of children from adult offenders. Until recently, policy initiatives have focused on offenders producing child pornography, stalking children online, or distributing child pornography.

*Security and privacy settings and their use.* Our findings suggest several considerations for policymakers. With the rapid emergence of social networking use

whereas 59% reported access that was restricted to friends only.<sup>14</sup>

Practical policies for promoting Internet safety among teens could include educating them regarding privacy settings and alerting them about offenders' tendency in chat rooms to very quickly move to using sexual language when chatting with potential targets. Prevention efforts aimed at increasing student education regarding privacy on the Internet can be implemented by nurses who are based in schools, the community, clinics, and parishes.

Social network owners and operators should focus on actions and functionalities they might add to their

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by children and teenagers as well as offenders, policies must address improving profile security and privacy settings for Internet use. The tools provided to social network users make relatively nontechnical users proficient at tasks that only a few years ago were the province of computer experts. The ability to engage in Web publishing, communicate at different levels of privacy, share photographs and documentary materials, and easily publish complex media creates a user community that may appear to be highly savvy about the Web while in fact comprising users of widely varying computer skill. A large percentage of users may not be able to judge the quality of security and privacy tools provided or the best way to use them. Moreover, because the social network owner is likely to focus on making the network experience increasingly enjoyable, easy, and powerful, it may fall to outside agents—legislators, privacy groups, or law enforcement representatives—to continually press these sites to improve security and privacy, perhaps especially relatively small sites that may escape public scrutiny.

Among adults who create social networking profiles, transparency (not using a privacy setting) is still often the standard, although many users are gradually becoming savvier about these functions and their importance. Research from 2007 on social networks found that 82% of adults with an online profile said they'd made it visible to all users (as compared with 77% of teens with online profiles).<sup>14</sup> Teens with social media profiles tend to make more conservative choices than do adults about privacy settings; just 40% reported that their profile was visible to anyone,

sites that would help young people to protect their privacy. Network owners can build in audit tools that allow users to track the dissemination of their personal information. Another step would be to increase the amount of time that content is stored and retrievable, either at the specific request of the information's owner or a court of competent jurisdiction. It may also be warranted to follow the lead of Internet security programs that include a capture log function that keeps track of a computer's Internet activity and computer-to-computer communication for a predetermined amount of time. Would-be offenders may not be as willing to use private chat, instant messaging, or other private speech if they know that such communications will be stored and retrievable for a limited time; the saving of these communications is now typically up to the user, who must save and then archive each activity. Likewise, to limit liability, cost to providers, and misuse, such storage should be statutorily limited in duration.

It's also crucial to implement policies to protect teens from offenders who disguise their identities while using chat rooms. Policymakers need to consider making it an act of negligence to fail to offer a reasonable set of security and privacy tools or to collect and disseminate information users disclose without offering them a clear choice to do so. Additionally, because it's impossible to arrest one's way to safety, significant resources should be committed as part of any funding for investigations and prosecutions in order to encourage the education of parents and adults to help them effectively supervise and assist children or youth in their care. Many specialists within nursing, such as

pediatric nurses; school-based, community, and parish nurses; and advanced practice nurses, can join this policy effort.

In addition, the fact that adolescents are being threatened and sexually abused after meeting someone online needs to be further understood. Students may not always report such a sexual assault to parents or school authorities, but nurses (school, pediatric, psychiatric-mental health, and parish) are in an ideal position to take a leadership role in assessing and screening for victimization or vulnerability. We need policies to ensure that silent victimization isn't happening, that students are provided trauma services, and that offenders are identified.

The Internet is a proverbial open window, allowing adults relatively easy access to children and adolescents. The majority of offenders in our study reported being deceitful about their identities when in chat rooms and communicating about sex almost immediately once online. Primary prevention efforts are critical for educating students and their parents regarding online dangers from both pornography and predation. School curriculums should include such information, and nurses are in a position to adapt the content to successful evidence-based models similar to those applied to other risky health behaviors such as adolescent tobacco and alcohol use.

### LIMITATIONS

The study findings should be viewed in light of the study limitations. This study relied upon adolescents', young adults', and offenders' own reports of Internet social network use. Self-reporting may accurately represent social network use, but it may involve exaggeration or underreporting. Additionally, the offender group in this study isn't representative of all offender groups and their social network use: many of the offenders didn't answer all questions related to Internet use. Given the relatively recent explosion in social networking and the fact that adults tend to adopt these technologies after they have become popular among teens, some of the offenders studied may simply not have yet had the opportunity to use these networks. For that reason, continual study of this offender pool is important to understanding and properly reacting to new threats. Another limitation is that the majority of students and offenders in this study sample were white; their responses may not be representative of all child, adolescent, young adult, or offender groups. ▼

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