Risk Factors for and Impact of Online Sexual Solicitation of Youth

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H EALTH CARE PROFESSIONALS, educators, and others concerned with children are increasingly called upon to design policies and proffer advice about children's Internet use.[1] But much like parents, they are perplexed because the media offer competing images depicting the Internet as both a tremendous new tool for education and recreation for young people[2] and a potential threat to their physical and emotional safety.[3]

As is often the case with child welfare issues, there are also competing images of the vulnerable population of young people. On the one hand are descriptions of naive and inexperienced children falling prey to exploitation as a result of Internet use.[4] On the other hand are images of technologically savvy teens, whose propensities for risk-taking and getting in trouble are exponentially expanded by the Web.[5] While both images have their reality, they have different implications for prevention and protection.

Little scientific information exists on the experiences of youth online. The present study was designed to gather data about online solicitation of youth and the characteristics of the youth at risk.

Context Health care professionals, educators, and others are increasingly called upon to advise parents and policymakers about risks posed to children by Internet use. However, little scientific information exists on the experiences of children online.

Objective To assess the risk factors surrounding online sexual solicitations of youth and distress due to solicitation.

Design, Setting, and Participants Telephone survey (August 1999–February 2000) of a random sample of 1501 youth aged 10 through 17 years who were regular Internet users.

Main Outcome Measures Demographic and behavioral characteristics associated with solicitation risk and distress due to solicitation.

Results Nineteen percent of youth who used the Internet regularly were the targets of unwanted sexual solicitation in the last year. Girls ($P<.001$), older teens ($P=.005$), troubled youth ($P=.004$), frequent Internet users ($P=.01$), chat room participants ($P<.001$), and those who communicated online with strangers ($P<.001$) were at greater risk. Twenty-five percent of the solicited youth reported high levels of distress after solicitation incidents. Risk of distress was more common among the younger youth ($P=.005$), those who received aggressive solicitations (the solicitor attempted or made offline contact) ($P=.001$), and those who were solicited on a computer away from their home ($P=.001$).

Conclusions Many young people who use the Internet encounter unwanted sexual overtures. Health care professionals, educators, and parents should be prepared to educate youth about how to respond to online sexual solicitations, including encouraging youth to disclose and report such encounters and to talk about them.

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METHODS

The Youth Internet Safety Survey consisted of telephone interviews between August 1999 and February 2000 with a national sample of 1501 youth, ages 10 through 17 years, who used the Internet regularly (at least once a month for the past 6 months on a computer at home, school, library, someone else's home, or elsewhere).[6] Households with children in the target age group were identified through another large household survey on missing children conducted at Temple University between February and December 1999.[7]

When contacting a household, interviewers from a national survey research firm screened for regular use of the Internet by a youth in the target age group. Interviewers then asked to speak with the parent who knew the most about the youth's Internet use, conducted a short interview assessing household rules and parental concerns about Internet use, and gathered demographic characteristics. The interviewer requested permission from the parent to speak with the youth. Parents were assured of the confidentiality of the interview and were informed that the interview would include questions about "sexual material your child may have seen."

Upon achieving parental consent, interviewers described the study to the youth and obtained his or her oral consent.[6] Youth interviews, which lasted about half an hour, were scheduled at the youth's convenience and arranged for times when he/she could talk freely.

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Table 1. Logistic Regression of Youth Risk for Internet Sexual Solicitation

Characteristic	Youth Surveyed, No. (N = 1501)	Youth Solicited, No. (%) (n = 286)	OR (95% CI)*	P Value
Age of youth, y†				
10-13	558‡	66 (11.8)	0.6 (0.4-0.9)	.005
14-17	942‡	220 (23.4)	1.00	
Sex				
Girls	708‡	188 (26.6)‡	2.7 (2.2-3.3)	<.001
Boys	790‡	97 (12.3)‡	1.00	
Troubled§				
Yes	231	70 (30.3)	1.7 (1.2-2.5)	.004
No	1270	216 (17.0)	1.00	
High Internet use‖				
Yes	410	124 (30.2)	1.5 (1.1-2.0)	.01
No	1091	162 (14.8)	1.00	
Goes to chat rooms†				
Yes	838	258 (30.8)	3.9 (2.6-5.6)	<.001
No	663	28 (4.2)	1.00	
Talks to strangers online†				
Yes	839	259 (30.9)	3.9 (2.6-5.7)	<.001
No	662	27 (4.1)	1.00	
High online risk behavior¶				
Yes	78	35 (44.9)	2.1 (1.2-3.7)	.006
No	1423	251 (17.6)	1.00	
Use Internet at other households				
Yes	1028	240 (23.3)	1.5 (1.0-2.3)	.03
No	473	46 (9.7)	1.00	
−2 Log likelihood			1093.10	
χ^2_8			364.30#	
R^2 (Cox and Snell)			0.22	
R^2 (Nagelkerke)			0.35	

*OR indicates odds ratio; CI, confidence interval.
†Odds ratios corrected due to common outcomes.[14]
‡Data are missing so numbers do not total.
§*Troubled* is a composite variable that includes items from a negative life events scale (death in the family, moving to a new home, parents divorced or separated, and/or a parent losing a job); from the physical and sexual assault items on a victimization scale; and a depression scale (≥5 depression symptoms in the past month). Those with a composite value 1 SD above the mean or higher were coded as having this characteristic; the rest were coded as zero.
‖*High Internet use* is a composite variable consisting of high experience with the Internet (4 or 5 on a scale of 1-5), high importance of Internet in child's life (4 or 5 on a scale of 1-5), spending 4 or more days online in a typical week, and spending 2 or more hours online on a typical day. Youth with a composite value 1 SD above the mean or higher were considered high Internet users.
¶*High online risk behavior* is a composite variable of the following dichotomous variables pertaining to youth behavior online: posting personal information, making rude or nasty comments, playing a joke on or annoying someone, harassing or embarrassing someone, talking about sex with someone never before met in person, and going to x-rated sites on purpose. Youth with a composite value 2 SDs above the mean or higher were considered high online risk takers.
#$P<.001$.

The questionnaire used was developed through a series of focus groups with youth in the target age group (10-17 years). Once completed, questionnaires were pretested with both parents and youth. Feedback from the pretest was incorporated into the final version used for the study. Respondents were promised complete confidentiality and told they could skip any questions they did not want to answer and stop the interview at any time. Youth respondents received brochures about Internet safety and were paid $10. The survey was conducted under the supervision of the University of New Hampshire's Human Subjects Committee.

Variables

Sexual solicitations were defined as requests to engage in sexual activities or sexual talk or to give personal sexual information that were unwanted or, whether wanted or not, were made by an adult. To distinguish a category of potentially more serious incidents, aggressive solicitations were defined as those in which the solicitor made or attempted offline contact with the youth by telephone, by mail, or in person. To look more closely at the impact of sexual solicitations, distressing sexual solicitations were defined when youth rated themselves very or extremely upset or afraid as a result of solicitation incidents. Several independent variables were initially examined to determine their relationship with the dependent variable, with nonsignificant variables excluded from the final analyses.

Statistical Analysis

Using SPSS version 10.0 (SPSS Inc, Chicago, Ill), 2 logistic regressions were conducted to test the relationships of demographic and behavioral characteristics with solicitation risk and solicitation distress symptomatology. Variables were entered in a hierarchical fashion, beginning with demographic variables followed by variables associated with youth behavior and aspects of youth Internet use. An additional step was included for the distress symptomatology regression that included solicitation incident characteristics. Independent variables were chosen based on their relationships to sexual victimization found in past research in this field, along with aspects of Internet use that could, conceptually, play a role in risk.

RESULTS

The completion rate among eligible households was 82%.[6] Of the final sample, 53% were boys and 47% were girls. The mean (SD) age was 14 (2) years. The majority of youth were non-Hispanic whites (73%) and came from households with annual incomes of more than $50 000 (46%). This sample is not representative of all youth in the United States because Internet use is not evenly distributed among the population, although the sample generally matches other representative samples of youth Internet users.

As reported previously, 19% (286/1501) of the youth interviewed experienced at least 1 sexual solicitation while using the Internet in the past year and

3% reported an aggressive solicitation.[6] Only 10% of sexual solicitations were reported to the police, an Internet service provider, or other authority.[6] Moreover, most parents (69%) and youth (76%) had not heard of places where they could report these episodes.[6]

In terms of risk, girls and older youth (14-17 years) were more likely to be solicited (**TABLE 1**). Risk was higher for youth who were troubled (for definition see Table 1 footnote). It was also higher for those who used the Internet more frequently (for definition see Table 1 footnote), participated in chat rooms, engaged in risky behavior online (for definition see Table 1 footnote), talked to strangers online, or used the Internet at households other than their own. However, the impact of these risk factors should not be overstated. For example, 75% of the sexually solicited youth were not troubled. Ten percent did not use chat rooms, and 9% did not talk with strangers. Parental supervision techniques such as requiring youth to ask permission before going online (by 28% of parents with solicited youth), having rules about the number of hours spent online (28%), having rules about things not to do online (84%), asking what youth do online (81%), checking the computer screen while youth are online (72%), checking the history function (47%), and checking files or diskettes (35%) were not related to solicitation risk, nor was the use of filtering or blocking technology (used in 25% of the households of solicited youth).

Twenty-five percent of the solicited youth reported they were very or extremely upset or afraid as a result of an online solicitation.[6] Distress was more common among younger (10-13 years) youth and those experiencing an aggressive solicitation; distress was also more common when the solicitation occurred via a computer at someone else's home (**TABLE 2**).

COMMENT

The epidemiology of Internet sexual solicitation has elements that both reassure and concern those seeking to situate this problem in the spectrum of threats to children's safety and well-being. On the reassuring side, as far as candor can be trusted, no youth in the sample was actually sexually assaulted as a result of contacts made over the Internet. That does not mean that such abuse does not occur, but that such events are probably not as common as others, such as intrafamilial sexual abuse, date rape, and gang violence, that do tend to show up in surveys of this size.[8]

On the concerning side, the study suggests that youth encounter a substantial number of offensive episodes as they navigate cyberspace, including aggressive incidents where offline contact is attempted or made. Enough of these encounters threaten to spill over into real life that youth should be instructed how to minimize their risk.

The findings suggest some directions for promoting Internet safety. Young people who stay away from chat rooms and are cautious about corresponding with strangers on the Internet appear to be solicited at lower rates. Parents and practitioners may wish to establish such rules and to give such counsel to teenagers. However, one of the attractions of the Internet is the potential to widen circles of friends. There are moderated chat rooms and other online meeting places that may be relatively safe and civil, but the present survey did not gather enough details to differentiate them.

The finding that troubled youth have a higher risk of solicitations suggests that youth who are alienated or depressed may be more vulnerable to online exploitation by strangers. This is consistent with other studies showing depression to be a general risk for victimization,[9,10] and it highlights a group worth targeting for prevention information. However, this finding should not be interpreted as implying that only troubled youth encounter problems on the Internet.

Obviously, professional advice and family Internet policies need to take into account the ages of children. The present study found younger children less likely to be solicited but more likely to be distressed when they were. Alerting younger children about online sexual solicitations and helping them to role-play responses may reduce some of the potential for distress.[11-13] At the same time, the admonitions and prohibitions that may be appropriate and effective with younger children may not work with older adolescents. It may be useful to have more prevention efforts for older

Table 2. Logistic Regression of Youth Risk for Distressing Internet Sexual Solicitation

Characteristic	Youth Solicited, No. (n = 286)	Distressed Youth, No. (%) (n = 72)	OR (95% CI)*	P Value
Age of youth, y				
10-13	66	26 (39.4)	2.5 (1.3-4.6)	.005
14-17	220	46 (20.9)	1.00	
Solicited on computer at someone else's home†				
Yes	62‡	26 (41.9)‡	2.0 (1.4-2.8)	.001
No	223‡	45 (20.2)‡	1.00	
Solicitor attempted or made offline contact†				
Yes	43	20 (46.5)	2.3 (1.5-3.1)	.001
No	243	52 (21.4)	1.00	
−2 Log likelihood			287.51	
χ^2_3			32.47§	
R^2 (Cox and Snell)			.11	
R^2 (Nagelkerke)			.16	

*OR indicates odds ratio; CI, confidence interval.
†Odds ratios are corrected due to common outcomes.[14]
‡Data are missing so numbers do not total.
§$P<.001$.

teens come from peers and other sources credible with that group. Also, places to report these incidents, such as the CyberTipline operated by the National Center for Missing & Exploited Children (available at: http://www.cybertipline .com), should be more widely advertised and reporting should be made easier, more immediate, and more important to young Internet users.

It is reassuring that 75% of the solicited youth were not distressed by their encounters, but the minority of targeted children who reported high levels of distress should be special subjects of concern. These distressed youth tended to be younger and to have had more aggressive solicitations. In addition, distress was higher when the solicitation occurred on a computer at someone else's home. Being solicited while accessing the Internet away from home may make the youth feel more vulnerable or potentially embarrassed because others may know, or guilty because these may be youth whose families object to them going online. The findings suggest that pediatric professionals, school counselors, youth workers, and others concerned about children's mental health should become conversant about and be prepared to deal with distress resulting from online sexual solicitations.

This study provides enough concerning facts for public health officials, educators, law enforcement officers, and child protection workers to add Internet solicitation to the list of childhood perils about which they should be knowledgeable and able to provide counsel to families. At the same time, the concerns are not so alarming that they should by themselves encourage parents to bar children from accessing the Internet.

REFERENCES

1. Dorman SM. Internet safety for schools, teachers, and parents. *J School Health*. 1997;67:355.
2. Roper Starch Worldwide. *America Online/Roper Starch Cyberstudy*. New York, NY: Roper Starch Worldwide; 1999.
3. Turow J. The Internet and the family: the view from parents, the view from the press. 1999. Available at: http://www.appcpenn.org/appc/reports/rep27 .pdf. Accessed May 14, 2001.
4. Aftab P. *The Parent's Guide to Protecting Your Children in Cyberspace*. New York, NY: McGraw-Hill; 2000:126-128.
5. *Websense: A Study of Teens and Their Use of the Internet*. Norwalk, Conn: Yankelovich Partners; 1999: 1-54.
6. Finkelhor D, Mitchell KJ, Wolak J. *Online Victimization: A Report on the Nation's Youth*. Alexandria, Va: National Center for Missing & Exploited Children; 2000:1-50.
7. Hanson L. Second comprehensive study of missing children. In: *Juvenile Justice Bulletin*. Washington, DC: US Dept of Justice; 2000. Publication NCJ179085.
8. Finkelhor D, Dziuba-Leatherman J. Children as victims of violence: a national survey. *Pediatrics*. 1994; 94:413-420.
9. Boney-McCoy S, Finkelhor D. Is youth victimization related to trauma symptoms and depression after controlling for prior symptoms and family relationships? a longitudinal, prospective study. *J Consult Clin Psychol*. 1996;64:1406-1416.
10. Acierno R, Resnick H, Kilpatrick DG, Saunders B, Best CL. Risk factors for rape, physical assault, and post-traumatic stress disorder in women: examination of differential multivariate relationships. *J Anxiety Disord*. 1999;13:541-563.
11. Kirby D, Coyle K. School-based programs to reduce sexual risk-taking behavior. *Child Youth Serv Rev*. 1997;19:415-436.
12. Jupp JJ, Griffiths MD. Self-concept changes in shy, socially isolated adolescents following social skills training emphasizing role plays. *Aust Psychol*. 1990;25: 165-177.
13. Demarest DS, Hooke JF, Erickson MT. Preoperative intervention for the reduction of anxiety in pediatric surgery patients. *Child Health Care*. 1984;12: 179-183.
14. Zhang J. What's the relative risk? a method of correcting the odds ratio in cohort studies of common outcomes. *JAMA*. 1998;280:1690-1691.