

The Relative Importance of Online Victimization in Understanding Depression, Delinquency, and Substance Use

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This article explores the relationship between online and offline forms of interpersonal victimization, with depressive symptomatology, delinquency, and substance use. In a national sample of 1,501 youth Internet users (ages 10-17 years), 57% reported some form of offline interpersonal victimization (e.g., bullying, sexual abuse), and 23% reported an online interpersonal victimization (i.e., sexual solicitation and harassment) in the past year. Nearly three fourths (73%) of youth reporting an online victimization also reported an offline victimization. Virtually all types of online and offline victimization were independently related to depressive symptomatology, delinquent behavior, and substance use. Even after adjusting for the total number of different offline victimizations, youth with online sexual solicitation were still almost 2 times more likely to report depressive symptomatology and high substance use. Findings reiterate the importance of screening for a variety of different types of victimization in mental health settings, including both online and offline forms.

Keywords: *delinquency; depression; Internet; substance use; youth; victimization*

Children, and especially adolescents, are using the Internet in ever-increasing numbers. Today, 87% of U.S. teens (ages 12-17 years) use the Internet, up

from 73% in 2000 (Lenhart, Madden, & Hitlin, 2005). Although the Internet can provide a wealth of information and opportunities to youth, as with any other aspect of their lives, there are potential risks and dangers involved. As is often the case with child welfare issues, there are competing images of the population of young people most vulnerable to online dangers. On the one hand are descriptions of naïve and inexperienced children prey to exploitation as a result of Internet use (Aftab, 2000). On the other hand are images of technologically savvy teens, whose Internet use involves risk-taking behaviors that increase their risk for unwanted experiences (Mitchell, Finkelhor, & Wolak, 2007; Ybarra, Mitchell, Wolak, & Finkelhor, 2007). Although both images have their reality, they have different implications for policy and prevention.

Two online dangers most commonly discussed are sexual solicitation and harassment (Finkelhor, Mitchell, & Wolak, 2000; Wolak, Mitchell, & Finkelhor,

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2003; Ybarra & Mitchell, 2004a, 2004b). Reports indicate that such experiences occur somewhat frequently. An estimated one in seven youth between ages 10 and 17 years received at least one unwanted sexual solicitation or approach over the Internet in a one-year period (Wolak, Mitchell, & Finkelhor, 2006). Solicitors were largely male (73%), adults (39%) and juveniles (43%), and mostly people met online (86%). One in 11 youth report being threatened or harassed on the Internet at least once in the previous year. One half of harassers were male, 44% were offline friends or acquaintances of the youth, and 58% were other juveniles. Such forms of online interpersonal victimization are significantly related to the concurrent report of psychosocial problems.¹ For example, youth who report being the target of an unwanted sexual solicitation are significantly more likely to be troubled (i.e., concurrent reports of offline physical or sexual abuse, conflict with parents) (Mitchell, Finkelhor, & Wolak, 2001; Mitchell et al., 2007). Targets of Internet harassment are significantly more likely to report major depressive symptomatology compared to nontargets (Ybarra, 2004). Furthermore, a notable subgroup of youth who report past-year online sexual solicitation (33%) and harassment (38%) indicate feeling very or extremely upset or afraid as a result, with some showing stress symptoms such as being unable to stop thinking about the incident and feeling jumpy or irritable (Wolak et al., 2006). At the same time, it is important to recognize that online sexual solicitations and harassment are, to a greater or lesser extent depending on the particular details, extensions of experiences in existence prior to the advent of the Internet. Research suggests that for some youth, there may be no real distinction between the online and offline version of the problems, whereas for others the Internet may have introduced something qualitatively or quantitatively new in the form of increased severity, increased frequency, or some unique dynamic that requires new responses or interventions (Mitchell, Finkelhor, & Becker-Blease, 2007). Regardless, the Internet is so integrated into the lives of today's youth, it is important to understand the relationship of this technology to the offline experiences and behavior we have been studying for decades so accurate and effective policy and prevention materials can be developed.

Offline Victimization

Offline interpersonal victimizations such as physical and sexual abuse are consistently associated with many negative outcomes, including depression,

problematic substance use, delinquent behavior, post-traumatic stress disorder, anxiety, sexual disorders, eating disorders, risky sexual behavior, and risk for revictimization (Saunders, 2003). Moreover, most youth experience more than one victimization during their childhood (Saunders, 2003), and chronically victimized youth are significantly more likely to report psychological distress than their peers who report only a single victimization or none at all (e.g., Boney-McCoy & Finkelhor, 1995; Chang, Chen, & Brownson, 2003; Hibbard & Hartman, 1990; Holt & Espelage, 2003; Hughes, Parkinson, & Vargo, 1989; Naar-King, Silvern, Ryan, & Sebring, 2002; Turner, Finkelhor, & Ormrod, 2006). The concept of *poly-victimization* in childhood, namely victims who report four or more different types of victimization (i.e., all those above the mean) (e.g., sexual abuse, physical abuse, peer victimization, and witnessing domestic violence) has been recently introduced (Finkelhor, Ormrod, & Turner, 2007; Finkelhor, Ormrod, Turner, & Hamby, 2005). These victims have significantly higher rates of trauma symptoms such as anxiety, depression, and anger and/or aggression than youth experiencing fewer types of victimization as well as those experiencing chronic victimization of the same type (e.g., repeated bullying) (Finkelhor et al., 2007). There is thus a growing recognition that identifying and taking into account additional victimizations beyond physical and sexual abuse are important in understanding the psychosocial functioning of a young person as well as putting together a treatment plan.

Given the large number of youth using the Internet, understanding the role of online victimization in a broader framework of victimization is an important and informative extension of this emerging area of child and adolescent mental health research. Furthermore, the relative importance of online victimization for understanding negative symptomatology (i.e., depression, delinquency, and substance use) when taking into account offline victimization is critical in our understanding of the importance of online victimization in a larger perspective of youth experiences.

Current Article

Given the significant mental and behavioral health burden victimization can place on some children and adolescents, understanding how online victimizations may relate to this burden will help inform child health professionals in their assessment procedures and treatment strategies. Using data from the First Youth Internet Safety Survey

(YISS-1), a large, nationally representative survey of Internet-using youth, this exploratory article endeavors to examine the relationship between past-year online interpersonal victimization and offline forms of interpersonal victimization (also past year). Specifically, we first examine whether online interpersonal victimization is related to offline victimization and depressive symptomatology, delinquency, and substance use. Second, we examine whether online victimization is still associated with such negative symptomatology when offline victimizations are taken into account.

METHOD

Participants

The sample consisted of 1,501 youth between ages 10 and 17 years (53% boys and 47% girls) who had used the Internet at least once a month for the previous 6 months. The mean age for youth was 14.1 years ($SD = 1.96$). The majority of youth were non-Hispanic White (73%) with an additional 10% Black, non-Hispanic; 8% from other races, non-Hispanic; and of 7% Hispanic ethnicity. Sixty-three percent of youth lived with both of their biological parents at the time of the interview, 33% with a single parent or other individual, and 4% with a biological parent and a step-parent. Twenty-three percent lived in households with an annual income more than US\$75,000, 23% with more than \$50,000 to \$75,000, 38% with \$20,000 to \$50,000, and 8% with less than \$20,000 (7% of income data missing). The demographic characteristics of the sample population were generally higher than the average household in the United States but were reflective of households with Internet access at the time of data collection (Lebo, 2001). For example, more than three fourths of adult respondents reported at least some college as the highest household education, and one half of the households surveyed had an annual income of \$50,000 or higher. (See Finkelhor et al., 2000, for more details about the sample.)

Procedure

Households with children in the target age group were identified through another large, nationally representative telephone survey, the Second National Incidence Study of Missing, Abducted, Runaway and Thrownaway Children (NISMART-2), which was conducted by the Institute of Survey Research at Temple University between February and December 1999 (Sedlak, Finkelhor, Hammer, & Schultz, 2002). Households that were identified as having at least one child between age 9 and 17 years

during the NISMART-2 adult-screening process were flagged for possible YISS-1 selection. In total, 6,594 phone numbers were forwarded to YISS-1 investigators. (For more information about the NISMART-2 methodology, please refer to Sedlak et al., 2002.)

All phone numbers received by YISS-1 from NISMART-2 were dialed, and successful contact was made with 3,446 households by the end of the survey period. Seventy-five percent of those households contacted completed the eligibility screen, 72% of which were identified as eligible for YISS-1 participation. Finally, 82% ($N = 1,501$) of eligible households completed the adult and youth surveys (Finkelhor et al., 2000). Characteristics of eligible, nonparticipants were not available for comparison.

The staff of an experienced national survey research firm, Schulman, Ronca, and Bucuvalas, Inc. (SRBI), conducted the interviews for YISS. On reaching a household, interviewers screened for regular Internet use (i.e., using the Internet at least once a month for the past 6 months from any location) by a child in the target age group. If there were multiple eligible children, the one who used the Internet most frequently was chosen. Interviewers first conducted a short interview with the parent self-identified as knowing the most about the child's Internet use. Questions reviewed household rules and parental concerns about Internet use and gathered demographic characteristics. The interviewer then requested permission from the parent to speak with the previously identified youth.

After receiving parental consent, interviewers described the study to the child and obtained his or her verbal assent. Youth interviews lasted about half an hour. They were scheduled when the child could talk freely. 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. As an incentive, youth respondents received brochures about Internet safety and \$10 on completion.

The survey was conducted under the supervision of the University of New Hampshire's Human Subjects Committee, conformed to the rules mandated by research projects funded by the Department of Justice, and followed procedures in accordance with the Helsinki Declaration.

Measures

Online Interpersonal Victimization. Youth were asked a series of questions that aimed to establish their exposure to various types of unwanted experiences on the Internet. Unwanted Internet experiences

included in this article were sexual solicitations and harassment. Sexual solicitations were measured by an affirmative response to at least one of the following three questions: (a) "In the past year, did anyone on the Internet ever try to get you to talk online about sex when you did not want to?" (yes/no), (b) "In the past year, did anyone on the Internet ask you for sexual information about yourself when you did not want to answer such questions? I mean very personal questions, like what your body looks like or sexual things you have done?" (yes/no), and (c) "In the past year, did anyone on the Internet ever ask you to do something sexual that you did not want to do?" (yes/no). Harassment was measured by an affirmative response to at least one of the following two questions: (a) "In the past year, did you ever feel worried or threatened because someone was bothering or harassing you online?" (yes/no) and (b) "In the past year, did anyone ever use the Internet to threaten or embarrass you by posting or sending messages about you for other people to see?" (yes/no).

Offline Interpersonal Victimization. Selected items from the Juvenile Victimization Questionnaire (JVQ; Finkelhor, Hamby, et al., 2005) were used in the current study. The JVQ is an instrument that contains screening questions about 34 offenses against youth that cover five general areas of concern: conventional crime, child maltreatment, peer and sibling victimization, sexual victimization, and witnessing and indirect victimization. The JVQ has good construct validity based on item endorsement highly associated with trauma symptomatology and adequate test-retest reliability in a 3- to 4-week readministration (overall there was agreement among the two administrations for 95% of the screener endorsements). (See Finkelhor, Hamby, et al., 2005, for more details on the validity and reliability of the JVQ.)

Eight of the JVQ screener questions were chosen for inclusion in the current study (the entire instrument was not included because of length considerations). These particular items were chosen to cover a range of types of victimization. The chosen screener items included one question about theft ("In the last year, did someone steal something from you? Things like a backpack, wallet, lunch money, book, clothing, running shoes, bike, stereo, or anything else?" [yes/no]), simple assault ("In the last year, did someone attack you when you were somewhere like: at home, at someone else's home, at school, a store, in a car, on the street, at the movies, a park, or anywhere else?" [yes/no]), gang and/or group assault ("Sometimes kids are attacked by a group of kids or a

gang, including gangs they belong to. In the last year, have you been hit, jumped, or attacked by a gang?" [yes/no]), physical abuse ("In the last year, did a grown-up taking care of you hit, beat, kick, or physically abuse you in some other way?" [yes/no]), peer and/or sibling assault ("In the last year, have any kids, including your brothers and sisters, hit you when you were somewhere like: at home, at school, at someone's house, out playing, in a store, or anywhere else?" [yes/no]), sexual assault ("You probably know that there are people who grab, touch, or attack other people in sexual ways that are wrong. People can get forced to have sex or be made to touch someone's private parts. In the last year, have you been forced or made to do sexual things by someone else, including someone you didn't know or even someone you know well?" [yes/no]), bullying ("In the last year, did any kids, including you brothers and sisters, pick on you by chasing you, trying to scare you, threatening you, grabbing your hair or clothes, or making you go somewhere or do something you did not want to do?" [yes/no]), and witness assault ("In the last year, did you see someone get attacked at these kinds of places: at home, at someone else's home, at school, a store, in a car, on the street, at the movies, a park, or anywhere else?" [yes/no]).

In the current study, youth responses to our eight chosen JVQ screener questions were summed to create a count victimization score. From this, youth were divided into four groups based on their score: no offline victimization, one type of offline victimization, two types of offline victimization, and three or more types of offline victimization. The three or more cut-off consisted of youth who were more than one standard deviation above the mean for total number of victimization types. We chose to examine offline victimization in this manner to be consistent with the distribution of scores used by Finkelhor et al. (2007).

One complexity of victimization epidemiology is that multiple kinds of victimization can occur in a single episode. The full JVQ is designed to identify linkages among different kinds of victimizations occurring within a single episode (Finkelhor, Hamby, et al., 2005). Overall, Finkelhor, Hamby, et al. (2005) reported that the raw screener percentages are fairly accurate estimates of victimization. Also, data suggests that multiple forms of victimization can be effectively measured in several different ways and still serve useful clinical and research purposes. For users who have a primary interest in multiple victimization, Finkelhor, Ormrod, et al. (2005) recommended the screener sum version as the preferred measure because of its simplicity of administration. Furthermore, though a simple additive count of

victimization types does not take into account potential differences in seriousness among victimization types, it is a practice widely used in life-event measures and social stress research and seems appropriate in this exploratory stage of work on multivictimization measurement (Finkelhor, Ormrod, et al., 2005). (For more information about these and other details of the JVQ, please refer to Finkelhor, Ormrod, et al., 2005.)

Life Adversity. Youth were asked a series of questions designed to establish whether they had experienced an adverse life experience in the past year. Youth were coded as having experienced a life adversity in the past year if they responded positively to any of the following four questions: (a) "Have you had a death of a family member you lived with?" (yes/no), (b) "Have you moved to a new home?" (yes/no), (c) "Did your parents get divorced or separated?" (yes/no), and (d) "Has your mother or father lost a job?" (yes/no). This was included in all multivariate analyses because such events could account for some variance in negative symptomatology.

Demographic Characteristics. A number of youth and household demographic characteristics were adjusted for in the final multivariate analyses as such characteristics may be associated with negative symptomatology and victimization. Caregiver-reported variables include the child's gender, child's age, annual household income for 1998 (\$20,000 or less vs. other), child-parent living pattern (both biological parents vs. other), caregiver marital status (married vs. other), and type of community child resided in (city or suburb of large city vs. other). Youth-reported race and ethnicity was categorized as White versus other, Black versus other, and Hispanic ethnicity versus other for multivariate analyses.

Negative Symptomatology. Youth were queried as to their involvement in four delinquent behaviors in the past year: (a) taking something that did not belong to them (yes/no), (b) damaging property (yes/no), (c) being picked up by the police (yes/no), and (d) physically assaulting another person (yes/no). Responses to these questions were combined to create a total delinquent behavior score. As a conservative indicator of delinquent behavior, this frequency variable was dichotomized to reflect youth who had engaged in two or more types of delinquent behaviors in the past year versus fewer. Youth were queried regarding use of five different forms of substance use in the past year: (a) tobacco, (b) alcohol, (c) marijuana, (d) inhalants, and (e) any other drugs. Any positive response to each question was summed to create a

total substance use index. As a conservative indicator, a dichotomous variable was created to reflect multiple substance use (i.e., youth who had ever used three or more substances in the past year) versus lower use. We chose not to include the continuous measures in our analyses as this assumes there is a linear relationship, and that was not the case with these count variables.

Following the *Diagnostic Statistical Manual of Mental Disorders (DSM-IV-TR;* American Psychiatric Association, 2000) definition of *major depression*, youth were asked about the presence (yes/no) of each of the nine symptoms of depressive disorder. Each question referred to the previous month except for dysphoria, which referred to all day, nearly every day, within the previous 2 weeks. Furthermore, in accordance with the *DSM-TR's* requirement for additional functional impairment, youth were asked if they had felt "so down" that they had experienced challenge in (a) schoolwork, (b) personal hygiene, or (c) self-efficacy (i.e., feeling like he or she could do anything right). Youth with five or more symptoms, one of which is dysphoria or anhedonia, and functional impairment in at least one area, were classified as having clinical features of major depression.

Statistical Analysis

Bivariate. A series of chi-square cross-tabulations were performed to examine victimization type (including individual online and offline forms) by offline victimization grouping (i.e., none, one type, two types, three or more types). Then, using chi-square cross-tabulation, individual types of online and offline victimization were examined for their relationship with depressive symptomatology, delinquency, and substance use. Odds ratios (ORs) were adjusted to more closely approximate relative risk (Zhang & Yu, 1998).

Multivariate. A series of six step-wise logistic regression analyses were run to examine the relationship between online victimization and negative symptomatology, with and without adjusting for the total number of types of offline victimization (i.e., none, one type, two types, three or more types). For example, one logistic regression examined the relationship between sexual solicitation, offline victimization, and depressive symptomatology, while adjusting for demographic characteristics and life adversity. Step 1 of the model included demographic characteristics (using backward stepwise [conditional] elimination); Step 2 of the model added life adversity (using backward stepwise [conditional] elimination); Step

TABLE 1. Cross-Tabulations of Offline Victimization Grouping by Individual Types of Online and Offline Victimization

Victimization Type	Offline Victimization Grouping				$\chi^2(3)$	Mean Number of Offline Victimization Types ^a
	No Offline Victimization (42%) (n = 635)%	Single Victimization (28%) (n = 420)%	Two Victimizations (15%) (n = 223)%	Three or More Victimizations (14%) (n = 207)%		
Online victimization						
Harassment (n = 94)	25	25	18	31	28.45***	1.81
Sexual solicitation (n = 284)	26	27	22	25	63.14***	1.64
Offline victimization						
Sexual assault (n = 12)		8	8	83	49.03***	4.42
Gang/group assault (n = 31)		0	26	74	107.41***	3.68
Simple assault (n = 92)		8	13	79	358.03***	3.60
Physical abuse (n = 21)		9	19	71	62.49***	3.48
Bullying (n = 190)		12	27	61	483.73***	2.95
Witness assault (n = 394)		28	31	40	591.53***	2.41
Peer/sibling assault (n = 435)		30	29	41	667.99***	2.37
Theft (n = 436)		33	27	39	614.78***	2.34

NOTE: Percentages sum to 100% across each individual victimization type (row percentage). Rows that do not add to 100% are due to rounding.

The sample mean for number of offline victimization types was 1.08 ($SD = 1.27$).

a. Number reflects the mean number of offline victimization types for youth with any amount of each form of victimization.

*** $p < .001$.

3 forced in online sexual solicitation; and Step 4 forced in offline victimization. In these models, offline victimization was examined using simple contrasts that work by comparing each category of the predictor variable to the reference category (i.e., no offline victimization). For example, the OR for experiencing one type of offline victimization was in reference to experiencing none, and the OR for experiencing two types of offline victimization was in reference to none, and so on. Separate logistic regressions were run for each negative symptom (depression, delinquency, and substance use) for online sexual solicitation and harassment. ORs were adjusted to more closely approximate relative risk (Zhang & Yu, 1998).

RESULTS

The Relationship Between Past-Year Online and Offline Victimization

Interpersonal victimization was reported relatively frequently across respondents with 64% ($n = 956$) reporting at least one online or offline interpersonal victimization experience in the past year. Specifically, 23% of youth reported at least one of the two online interpersonal victimizations, and 57% reported at least one of the eight forms of offline interpersonal victimization examined. A minority of youth reported

an offline sexual assault (1%) or physical abuse (1%) in the past year. Six percent of youth reported a simple assault, and 6% reported an online harassment. More common were reports of theft (29%), peer and/or sibling assault (29%), witnessing assault (27%), and online sexual solicitation (19%). The majority of youth who reported at least one online victimization also reported at least one offline victimization (73%), whereas 29% of youth who reported at least one offline victimization also reported at least one online victimization.

Twenty-eight percent of youth experienced one type of offline victimization, 15% experienced two victimization types, and 14% experienced three or more victimization types (see Table 1). A summary count variable was created to reflect the total number of offline victimization types per respondent (Range: 0-7; $M = 1.08$, $SD = 1.27$ in general sample). In general, individuals who had experienced victimizations that were less common (i.e., more unusual) had higher victimization totals and generally were part of the three or more group of youth. For example, youth reporting a sexual assault reported an average of 4.42 total victimizations, those with a gang and/or group assault reported an average of 3.68 in the past year, those with a simple assault reported an average of 3.60 in the past year, and those with physical victimization reported an average of 3.48 in the past year (see Table 1). Alternately,

TABLE 2. Unadjusted Odds Ratios for the Relationships Between Victimization (Online and Offline) and Depressive Symptomatology, Delinquency, and Substance Use

Type of Victimization	Depressive Symptomatology (<i>n</i> = 77) OR (95% CI)	High Delinquency (2+ behaviors) (<i>n</i> = 79) OR (95% CI)	High Substance Use (3+ types) (<i>n</i> = 109) OR (95% CI)
Online victimization			
Harassment	2.5 (1.3, 4.3)**	2.2 (1.1, 3.9)*	2.0 (1.2, 3.4)**
Sexual solicitation	3.0 (1.9, 4.6)***	1.8 (1.2, 2.9)**	2.6 (1.8, 3.6)***
Offline victimization			
Sexual assault	10.5 (5.0, 15.9)***	4.9 (1.5, 10.9)**	8.5 (4.4, 11.9)***
Gang and/or group assault	2.5 (.93, 5.9)	7.4 (4.2, 11.5)***	3.1 (1.5, 5.7)***
Simple assault	3.6 (2.1, 5.9)***	6.7 (4.6, 10.0)***	3.1 (2.0, 4.8)***
Physical abuse	4.9 (2.1, 9.6)***	3.7 (1.4, 8.2)**	4.1 (1.9, 7.3)***
Bullying	3.3 (2.1, 4.9)***	2.6 (1.7, 4.0)***	1.6 (1.0, 2.5)*
Witness assault	3.3 (2.2, 4.9)***	5.0 (3.3, 7.6)***	3.3 (2.3, 4.5)***
Peer and/or sibling assault	2.6 (1.7, 3.9)***	3.1 (2.0, 4.6)***	1.6 (1.1, 2.3)**
Theft	3.6 (2.3, 5.5)***	4.5 (2.9, 6.6)***	2.1 (1.5, 2.9)***
# types of offline victimization			
None (Reference)			
One	1.8 (.80, 3.9)	6.0 (2.3, 15.0)***	2.5 (1.5, 4.0)***
Two	4.2 (2.0, 8.4)***	8.5 (3.2, 21.2)***	2.2 (1.2, 4.0)*
Three or more	10.0 (5.5, 17.2)***	23.2 (10.2, 46.4)***	5.4 (3.3, 8.3)***

NOTE: Odds ratios were adjusted to more closely approximate relative risk (Zhang & Yu, 1998).

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

youth reporting comparatively common victimizations reported the lowest average number of total victimizations. For example, youth reporting online sexual solicitation experienced an average of 1.81 total types of offline victimization, and those reporting harassment experienced an average of 1.64 types of offline victimization.

The Relationship Between Past-Year Victimization and Depressive Symptomatology, Delinquency, and Substance Use

Five percent of youth ($n = 77$) reported depressive symptomatology, 5% ($n = 79$) reported engaging in two or more delinquent behaviors, and 7% ($n = 109$) reported using three or more illegal substances in the past year. As depicted in Table 2, virtually all types of interpersonal victimization (online and offline) were bivariately related to depressive symptomatology, delinquency, and substance use. Youth who reported online harassment were 2.5 times more likely to report depressive symptomatology, 2.2 times more likely to report delinquency, and 2.0 times more likely to report substance use. Similarly, youth who reported sexual solicitation were 3.0 times more likely to report depressive symptomatology, 1.8 times more likely to report delinquency, and 2.6 times more likely to report substance use. These ORs were most similar to those of youth reporting bullying, witnessing assault, peer and/or sibling assault, and theft. Youth with less common forms of offline victimization, however, had even higher odds of

negative symptomatology. For example, youth who reported a sexual assault were 10.5 times more likely to report depressive symptomatology, 4.9 times more likely to report high delinquency, and 8.5 times more likely to report high substance use.

In terms of the total number of types of offline victimization, there was a notable increase in the odds of youth with three or more types of victimization in terms of their likelihood of depressive symptomatology, delinquency, and substance use (see Table 2). For example, youth with three or more types of victimization were 10.0 times more likely to report depressive symptomatology, whereas those with two types of offline victimization were 4.2 times more likely.

The Relative Importance of Past-Year Online Victimization in Understanding Depressive Symptomatology, Delinquency, and Substance Use

The results of the first three logistic regression models indicate that online sexual solicitation is related to depressive symptomatology (OR = 2.5), high delinquency (OR = 2.2), and high substance use (OR = 2.2) after adjusting for demographic characteristics and life adversity (Table 3). When including a categorical offline victimization variable (none, one type, two types, three or more types), these relationships were attenuated but mostly remained significant. The OR for depressive symptomatology was reduced to 1.8, 1.5 for delinquency (*ns*), and 1.8 for substance use. Offline victimization also was significantly related to depressive symptomatology, delinquency, and substance use.

TABLE 3. Logistic Regression of the Relative Influence of Online Sexual Solicitation on Negative Symptomatology With and Without Adjusting for Categories of Offline Victimization

	<i>Depressive Symptomatology</i> (<i>N</i> = 77) <i>OR</i> (95% <i>CI</i>)	<i>High Delinquent Behavior</i> (<i>N</i> = 79) <i>OR</i> (95% <i>CI</i>)	<i>Multiple Substance Use</i> (<i>N</i> = 109) <i>OR</i> (95% <i>CI</i>)
Model 1			
Online sexual solicitation ^a	2.5 (1.7, 4.0)***	2.2 (1.3, 3.5)**	2.2 (1.5, 3.2)***
Model 2			
Online sexual solicitation ^a	1.8 (1.1, 3.0)**	1.5 (.88, 2.5)	1.8 (1.2, 3.7)**
No offline victimization (Reference)			
One type	1.6 (.71, 3.5)	5.4 (2.1, 13.6)***	2.2 (1.3, 3.7)**
Two types	3.1 (1.4, 6.5)**	6.9 (2.5, 17.6)***	1.7 (.89, 3.3)
Three or more types	8.3 (4.4, 14.9)***	19.2 (8.1, 40.3)***	4.9 (2.9, 7.9)***
Model Summary			
Chi-square (<i>df</i>)	96.96 (8)***	110.08 (9)***	148.27 (9)***
-2 log likelihood	502.90	501.40	624.91
Cox & Snell <i>R</i> ²	.06	.07	.09
Nagelkerke <i>R</i> ²	.19	.21	.23

NOTE: Models control for gender, age, race, and ethnicity, whether child lives with biological parents, income, type of community, whether biological parents are married, and any life adversity in the previous year.

Offline victimization is examined using simple contrasts where each category of the predictor variable (except the reference category) is compared to the reference category.

Odds ratios were adjusted to more closely approximate relative risk (Zhang & Yu, 1998).

a. Main variable of interest.

p* < .05. *p* < .01. ****p* ≤ .001.

Using simple contrasts (i.e., when each category of the predictor variable is compared to the reference category), three or more types of victimization was associated with 8.3-fold increased odds of depressive symptomatology, whereas those with two types of offline victimization had a 3.1-fold increased odds, and those with one type were not at significantly increased odds (*OR* = 1.6). Similar findings were seen with three or more types of victimization and delinquency (*OR* = 19.2) and substance use (*OR* = 4.9).

The results of the next three logistic regression models indicated that, after adjusting for demographic characteristics and life adversity, online harassment was only significantly related to depressive symptomatology (*OR* = 2.4) (Table 4). After further adjusting for offline victimization, this relationship was attenuated and became nonsignificant (*OR* = 1.8). As was the case in the first three models, offline victimization was significantly associated with depressive symptomatology, delinquency, and substance use, with being victimized in three or more different ways of particular importance. Such victimization was related to increased odds of depressive symptomatology (*OR* = 9.0), delinquency (*OR* = 20.3), and substance use (*OR* = 5.4).

DISCUSSION

Utilizing a nationally representative sample of Internet-using youth, this article examines the relationship between past-year online and offline interpersonal

victimization, as well as the relative influence of online victimization in understanding the odds of concurrent reports of depressive symptomatology, delinquent behaviors, and substance use after adjusting for offline victimization. Online sexual solicitation appears to be related to the concurrent report of depressive symptomatology as well as substance use even after taking into account offline victimization. This suggests that online sexual solicitation may be related to a child's mental and behavioral health over and above offline victimizations. Professionals should be alerted to the problem of online sexual solicitation and be prepared to address such experiences with young clients when necessary. Internet harassment is significantly related to depressive symptomatology; however, this association is largely explained by the number of offline victimizations concurrently reported. Youth who present with a history of online victimization should be queried about a history of offline victimizations as well.

Past-Year Online and Offline Victimization

As found by other researchers (Finkelhor, Ormrod, et al., 2005; Saunders, 2003), more youth report than not report victimization in the past year, suggesting that such experiences are common for the majority of youth. Of all youth who report a past-year online victimization, almost three fourths also report at least one type of offline victimization in the past year. Some of the characteristics of victimized youth may influence their online safety by compromising

TABLE 4. Logistic Regression of the Relative Influence of Online Harassment on Negative Symptomatology With and Without Adjusting for Categories of Offline Victimization

	<i>Depressive Symptomatology</i> (<i>n</i> = 77) <i>Odds Ratio</i>	<i>High Delinquent Behavior</i> (<i>n</i> = 79) <i>Odds Ratio</i>	<i>Multiple Substance Use</i> (<i>n</i> = 109) <i>Odds Ratio</i>
Model 1			
Online harassment ^a	2.4 (1.3, 4.3)**	1.9 (.94, 3.6)	1.8 (.97, 3.1)
Model 2			
Online harassment ^a	1.8 (.90, 3.4)	1.2 (.54, 2.4)	1.4 (.71, 2.4)
No offline victimization (Reference)			
One type	1.7 (.74, 3.6)	5.5 (2.1, 13.7)***	2.3 (1.3, 3.9)**
Two types	3.5 (1.6, 7.2)**	7.2 (2.7, 18.4)***	1.9 (1.0, 3.6)*
Three or more types	9.0 (4.8, 15.9)***	20.3 (8.6, 42.1)***	5.4 (3.2, 8.6)***
Model summary			
Chi-square (<i>df</i>)	93.53 (8)***	108.05 (9)***	141.03 (9)***
-2 log likelihood	506.32	503.43	632.15
Cox & Snell <i>R</i> ²	.06	.07	.09
Nagelkerke <i>R</i> ²	.18	.21	.22

NOTE: Models control for gender, age, race, and ethnicity, whether child lives with biological parents, income, type of community, whether biological parents are married, and any life adversity in the previous year.

Offline victimization is examined using simple contrasts where each category of the predictor variable (except the reference category) is compared to the reference category.

Odds ratios were adjusted to more closely approximate relative risk (Zhang & Yu, 1998).

a. Main variable of interest

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

their capacity to resist or deter victimization and thus make them more vulnerable targets online such as feeling isolated, misunderstood, or depressed (Finkelhor & Asdigian, 1996). Longitudinal research is needed to better understand this complex interplay of online and offline victimization.

For youth who are solicited and harassed online, the average number of types of offline victimization is 1.8 and 1.6, respectively. These numbers are most similar to those seen with youth who have witnessed an assault, experienced a peer and/or sibling assault, and theft—forms of victimization that are perhaps less severe and unique than sexual assault and physical abuse. This is not surprising given the nature of most online solicitations and harassment, many of which are benign and not distressing to youth (Finkelhor et al., 2000). Still, almost one third of youth reporting online harassment, and one fourth of those reporting a sexual solicitation also report experiencing three or more types of offline victimization in the past year. This suggests that for some youth, likely the subgroup of victimized youth in greatest need of intervention, online victimization may be part of a larger spectrum of victimization experiences. On the other end of the spectrum, approximately one fourth of youth who report an online victimization report no offline victimization. Thus, similar to offline victimization, online victimization can occur singly and among young Internet users of various backgrounds and offline experiences; it is not limited to youth with perhaps more obvious signs of distress or those who feel isolated,

misunderstood, and depressed or lack traditional support and guidance within the family.

Online Sexual Solicitation and Its Relationship to Negative Symptomatology

Online sexual solicitation, in particular, appears to play a role in depressive symptomatology and substance use among young Internet users. Even after adjusting for the number of types of offline victimization and life adversity, youth reporting sexual solicitation are almost 2 times more likely to also report depressive symptomatology and substance use. However, some caution is necessary in interpreting these findings. First, this relationship may not be a direct, causal relationship. Given the cross-sectional nature of the current study, we have no way of knowing whether, for example, youth who are solicited online are more depressed as a result or whether depressed youth are more prone to solicitation; we only know that they are related in some way. In reality, it is likely that both pathways exist among some adolescents. Second, this relationship may be related to other factors that are not assessed by the demographic characteristics, offline victimization, and life adversity that we examined in the current study. It is possible there are additional underlying characteristics such as poor social support or caregiver-child relationships that might explain this observed association. Finally, the relationship could be attributed to the mental and behavioral health measures themselves. Other, more extensive evaluations of depression and substance use may result in different

conclusions. Further study is clearly warranted; however, even as an exploratory study, the findings about online sexual solicitation are useful as a risk marker for identifying youth with increased risk for mental health and behavior problems and even offline victimization. These online and offline challenges are likely characterized by a common underlying characteristic or tendency on the part of the youth in question, such as risky behavior or needs for social acceptance. Mental health professionals, school professionals, social workers, and others concerned about the well-being of this population should be knowledgeable about the Internet and how youth are behaving and what they experience online. Irrespective of whether negative symptomatology causes vulnerability to online victimization or online victimization causes negative symptomatology, a full evaluation about all these experiences and behaviors will result in more effective prevention and intervention strategies for this population. Furthermore, simply screening for victimization is not sufficient. It is crucial to also provide relevant follow-up services for these youth that address online and offline victimization.

Limitations

Although the current study is one of the first of its kind to explore the relationships between past-year online victimization, past-year offline victimization, and negative symptomatology, it is not without limitations. First, the reports of these online and offline victimizations do not take into account severity or frequency of an individual's victimization experience. Future studies should take into account these potentially important nuances. Second, the data were collected in 1999 to 2000 and thus cannot be said to represent the trends and patterns of Internet usage today. More youth are connected today and have a greater level of Internet savvy. Many behavioral trends remain the same, however; for example, e-mail remains the most commonly cited reason youth use the Internet, although instant messaging is gaining in popularity (Lenhart et al., 2005; Lenhart, Rainie, & Lewis, 2001; Turow & Nir, 2000). Third, by measuring different forms of offline victimization singly and only in the past year, we may be underestimating the full extent of victimization in the lives of our participants. Fourth, in 25% of households there were two or more youth in our target age range. In such instances, we asked the adult respondent to choose the youth with the most frequent Internet use to maximize the chance of identifying our outcomes of interest (i.e., online victimization). As a result, the sample may be slightly skewed to higher Internet users. However, we also included youth with access to

the Internet from any location (i.e., home, school, library, friend's home, or some other place) to help ensure a range of Internet-using behavior, from limited to extensive. Finally, we did not collect information about the offline parallels of solicitation and harassment. A fuller understanding of the interaction between such online and offline parallels is important to study in future research.

Conclusions

The current study provides some new insight into the relationship between online and offline interpersonal victimizations. As reported previously (Finkelhor, Ormrod, et al., 2005), the number of different types of victimizations experienced is more strongly related to the odds of negative symptomatology than individual victimizations, including online victimizations. Nonetheless, unwanted sexual solicitation is associated with depressive symptomatology and substance use over and above offline victimization, suggesting youth reporting this type of online victimization may need special attention from mental health professionals. Further research is needed to explore the complex relationships among these victimizations, characteristics of the youth that places them at increased risk for multiple victimization, and effective interventions to help reduce the risk for future victimization.

NOTE

1. Although we refer to this as online interpersonal *victimization*, youth online experiences represent a spectrum of incidents ranging from the relatively benign to serious (Finkelhor, Mitchell, & Wolak., 2000). Terms such as *unwanted*, *inappropriate*, and *offensive* apply to many episodes; however, online incidents do not generally have the violent and criminal aspects of more familiar child victimizations such as sexual or physical abuse.

REFERENCES

- Aftab, P. (2000). *The parent's guide to protecting your children in cyberspace*. New York: McGraw-Hill.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (3rd ed. rev.). Washington, DC: Author.
- Boney-McCoy, S., & Finkelhor, D. (1995). Prior victimization: A risk factor for child sexual abuse and for PTSD-related symptomatology among sexual abused youth. *Child Abuse & Neglect, 19*(12), 1401-1421.
- Chang, J. J., Chen, J. J., & Brownson, R. C. (2003). The role of repeat victimization in adolescent delinquent behaviors and recidivism. *Journal of Adolescent Health, 32*(4), 272-280.
- Finkelhor, D., & Asdigian, N. L. (1996). Risk factors for youth victimization: Beyond a lifestyles/routine activities theory approach. *Violence and Victims, 11*(1), 3-20.
- Finkelhor, D., Hamby, S. L., Ormrod, R., & Turner, H. (2005). The Juvenile Victimization Questionnaire: Reliability, validity, and national norms. *Child Abuse & Neglect, 29*, 383-412.

- Finkelhor, D., Mitchell, K. J., & Wolak, J. (2000). *Online victimization: A report on the nation's youth* (No. 6-00-020). Alexandria, VA: National Center for Missing & Exploited Children.
- Finkelhor, D., Ormrod, R. K., & Turner, H. A. (2007). Poly-victimization: A neglected component in child victimization. *Child Abuse & Neglect, 31*(1), 7-26.
- Finkelhor, D., Ormrod, R. K., Turner, H. A., & Hamby, S. L. (2005). Measuring poly-victimization using the Juvenile Victimization Questionnaire. *Child Abuse & Neglect, 29*, 1297-1312.
- Hibbard, R. A., & Hartman, G. L. (1990). Emotional indicators in human figure drawings of sexually victimized and nonabused children. *Journal of Clinical Psychology, 46*(2), 211-219.
- Holt, M. K., & Espelage, D. L. (2003). A cluster analytic investigation of victimization among high school students: Are profiles differentially associated with psychological symptoms and school belonging? *Journal of Applied School Psychology, 19*(2), 81-98.
- Hughes, H. M., Parkinson, D., & Vargo, M. (1989). Witnessing spouse abuse and experiencing physical abuse: A "double whammy"? *Journal of Family Violence, 4*(2), 197-209.
- Lebo, H. (2001). *The UCLA Internet report 2001. Surveying the digital future. Year two*. Available at <http://www.digitalcenter.org/pdf/InternetReportYearTwo.pdf>
- Lenhart, A., Madden, M., & Hitlin, P. (2005). *Teens and technology. Youth are leading the transition to a fully wired and mobile nation*. Washington, DC: Pew Internet & American Life Project.
- Lenhart, A., Rainie, L., & Lewis, O. (2001). *Teenage life online: The rise of the instant message generation and the internet's impact on friendships and family relations*. Washington, DC: Pew Internet & American Life Project.
- Mitchell, K. J., Finkelhor, D., & Becker-Blease, K. A. (2007). Linking youth Internet and conventional problems: Findings from a clinical perspective. *Journal of Aggression, Maltreatment & Trauma, 15*(2), 39-58.
- Mitchell, K. J., Finkelhor, D., & Wolak, J. (2001). Risk factors and impact of online solicitation of youth. *Journal of the American Medical Association, 285*(23), 3011-3014.
- Mitchell, K. J., Finkelhor, D., & Wolak, J. (2007). Youth Internet users at risk for the most serious online sexual solicitations. *American Journal of Preventive Medicine, 32*(6), 532-537.
- Naar-King, S., Silvern, L., Ryan, V., & Sebring, D. (2002). Type and severity of abuse as predictors of psychiatric symptoms in adolescence. *Journal of Family Violence, 17*(2), 133-149.
- Saunders, B. E. (2003). Understanding children exposed to violence: Toward an integration of overlapping fields. *Journal of Interpersonal Violence, 18*(4), 356-376.
- Sedlak, A. J., Finkelhor, D., Hammer, H., & Schultz, D. J. (2002). *National estimates of missing children: An overview* (NCJ 196465). Washington, DC: U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice & Delinquency Prevention.
- Turner, H. A., Finkelhor, D., & Ormrod, R. (2006). The effect of lifetime victimization on the mental health of children and adolescents. *Social Science & Medicine, 62*, 13-27.
- Turow, J., & Nir, L. (2000). *The Internet and the family 2000: The view from parents, the view from kids*. Available at http://www.annenbergpublicpolicycenter.org/04_info_society/family/finalrepor_fam.pdf
- Wolak, J., Mitchell, K. J., & Finkelhor, D. (2003). Escaping or connecting? Characteristics of youth who form close online relationships. *Journal of Adolescence, 26*(1), 105-119.
- Wolak, J., Mitchell, K. J., & Finkelhor, D. (2006). *Online victimization: 5 years later* (No. 07-05-025). Alexandria, VA: National Center for Missing & Exploited Children.
- Ybarra, M. L. (2004). Linkages between depressive symptomatology and Internet harassment among young regular Internet users. *CyberPsychology & Behavior, 7*(2), 247-257.
- Ybarra, M. L., & Mitchell, K. J. (2004a). Online aggressors, victims, and aggressor/victims: A comparison of associated youth characteristics. *Journal of Child Psychology & Psychiatry, 45*(7), 1308-1316.
- Ybarra, M. L., & Mitchell, K. J. (2004b). Youth engaging in online harassment: Associations with caregiver-child relationships, Internet use, and personal characteristics. *Journal of Adolescence, 27*(3), 319-336.
- Ybarra, M. L., Mitchell, K. J., Wolak, J., & Finkelhor, D. (2007). Internet prevention messages. Targeting the right online behaviors. *Archives of Pediatric and Adolescent Medicine, 161*, 138-145.
- Zhang, J., & Yu, K. F. (1998). What's the relative risk? A method of correcting the odds ratio in cohort studies of common outcomes. *Journal of the American Medical Association, 280*(19), 1690-1691.

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