

Associations between online sexual solicitation and depressive symptomatology

by
Michele Ybarra, MPH PhD
Philip Leaf, PhD

American Public Health Association 131th Annual Meeting, Nov 15-19 2003, San Francisco, CA

Thank you to Dr. David Finkelhor and his colleagues at the University of New Hampshire for the use and guidance of the Youth Internet Safety Survey data, and to my dissertation committee for their support and direction: Dr. Philip Leaf, Dr. William Eaton, Dr. Diener-West, Dr. Steinwachs, and Dr. Cheryl Alexander

* Thank you for your interest in this presentation. Please note that analyses included herein are preliminary. More recent, finalized analyses can be found in: Ybarra, M. L., Leaf, P. J., & Diener-West, M. (2004). Sex differences in youth-reported depressive symptomatology and unwanted internet sexual solicitation. *Journal Of Medical Internet Research*, 6(1), e5, or by contacting ISK for further information.

Unwanted sexual solicitation online

Three main types of sexual solicitation (Finkelhor, Mitchell & Wolak, 2000)

- Sexual talk
 - 15 y.o. girl: "I was on the Internet with [this] guy and all of a sudden the guy began to get perverted. I found it to be really uncomfortable."
- Sexual information
 - 11 y.o. girl: "I was talking with a man and he started to ask me about my physical features...[the] color of my eyes and bra size"
- Sexual acts
 - A 11 year old girl: "they told me to play with myself"
 - A 13 year old boy: " we were talking to this one girl and she wondered how big my privates were and she asked me to jack off so she could bang or something"

Depressive symptomatology in childhood

- 6% of youth at any time (Kessler & Walters, 1998)
- Significant public health burden
 - Increased risk for adult depressive episode and other disorders (Lewinsohn, Rohde, Klein & Seeley, 1999; Kessler, McGonagle, Swartz et al., 1993)
 - Increased health care utilization (Wu, Hoven, Bird et al., 1999)
- Demographic differences
 - Affects more females than males (Simonoff, Pickles, Meyer et al., 1997; Kazdin & Marciano, 1998; Silberg, Pickles, Rutter et al., 1999)
 - Risk of onset increases through adolescence (Kazdin & Marciano, 1998)

Links between depressive symptomatology and sexual experiences

- Child sexual abuse related to major depression and other clinical problems (Kendall-Tackett, Meyer-Williams & Finkelhor, 1993; Rind, Bauserman, Tromovitch; 1997). Depressive symptoms may be related to increased risk for subsequent sexual abuse (Boney-McCoy & Finkelhor, 1996).
- Depressive symptomatology has been linked to risky sexual practices for both males and females (Shrier, Harris, Sternberg et al., 2001).

Hypothesis

Depressive symptomatology will be linked to increased likelihood for Internet sexual solicitation.

Youth Internet Safety Study Methodology

Study design:

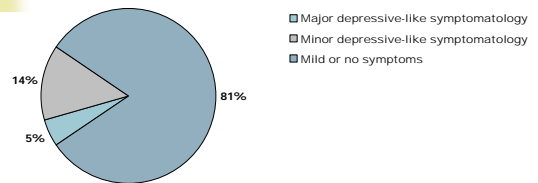
- National probability design
- Cross-sectional
- Telephone survey
- Fall 1999 and Spring 2000
- 1,501 youth and 1 caregiver
- 82% participation among contacted and eligible households

YISS Study Methodology (cont)

Inclusion criteria

- 10-17 years old
- Use Internet at least 3 times in previous 3 months (anywhere)
- English speaking
- Live in household for at least 2 weeks in previous year
- Caregiver and youth consent

Measures: Report of depressive symptomatology



- Major depressive-like symptomatology: 5+ sx's & functional impairment
- Minor depressive-like symptomatology: 3+ sx's
- Mild/no symptoms: <3 sx's

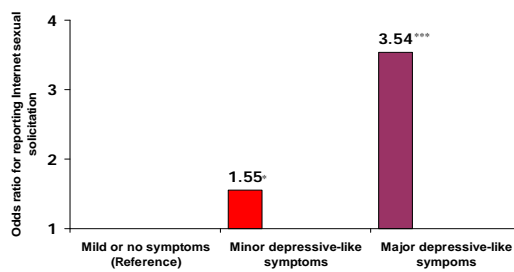
Statistical methods

- Complete data requirements: N=1,489
- Logistic regression
- Stratify by sex
- Parsimonious logistic regression model

General findings

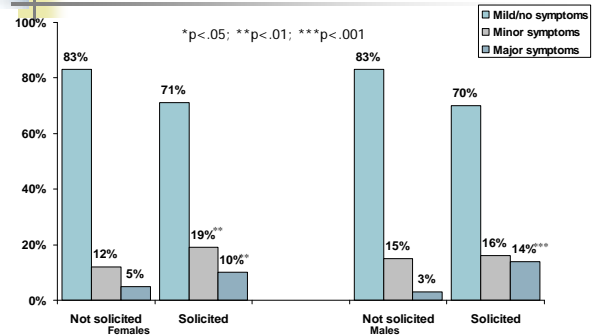
- 19% of regular Internet users in the previous year (Finkelhor, Mitchell & Wolak, 2000)
- 25% of those sexually solicited felt very/extremely upset or afraid (Finkelhor, Mitchell & Wolak, 2000)
- Females are 2 times as likely to be targeted than males
- 77% are 14 years and older
- 48% of perpetrators are youth

Odds of online solicitation given report of depressive symptomatology



*p<.05; **p<.01; ***p<.001

Unwanted sexual solicitation by sex & depressive symptomatology



*p<.05; **p<.01; ***p<.001

Final logistic regression model of sexual solicitation: **Male Internet users** (n=782)

<i>Youth characteristics</i>	<i>AOR (95% CI)</i>	<i>P-Value</i>
Depression		
Major depressive-like symptoms	2.72 (1.15, 6.40)	0.02
Minor depressive-like symptoms	0.89 (0.45, 1.77)	0.74
Mild/Absent symptomatology	1.00 (Reference)	
Psychosocial challenge		
Life challenge (2+)	2.94 (1.33, 6.50)	0.01
Interpersonal victimization (2+)	1.87 (1.12, 3.14)	0.02

Male Internet users:(Cont)

<i>Youth characteristics</i>	<i>AOR (95% CI)</i>	<i>P-Value</i>
Internet usage characteristics		
Interactive Internet use		
Frequent	4.80 (2.47, 9.35)	<0.01
Moderate	2.13 (1.16, 3.94)	0.02
Infrequent	1.00 (Reference)	
Most frequent Internet activity		
Chat room	3.13 (1.60, 6.11)	<.001
Email	1.57 (0.84, 2.94)	0.16
Instant Messaging	1.10 (0.52, 2.32)	0.80
All other	1.00 (Reference)	
Harasser of others online	1.80 (1.01, 3.20)	0.05

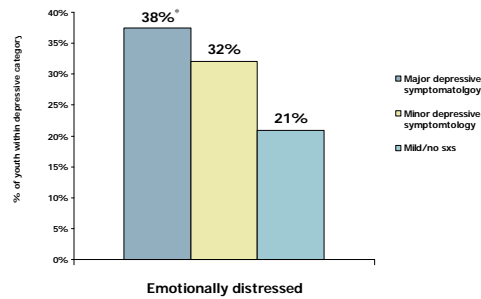
Final logistic regression model of sexual solicitation: **Female Internet users** (n=707)

<i>Youth characteristics</i>	<i>AOR (95% CI)</i>	<i>P-Value</i>
Depression		
Major depressive-like symptoms	1.40 (0.65, 2.99)	0.39
Minor depressive-like symptoms	1.62 (0.96, 2.76)	0.07
Mild/Absent symptoms	1.00 (Reference group)	
Psychosocial characteristics		
Substance use		
High user	2.87 (1.13, 7.34)	0.03
Average user	2.09 (0.97, 4.53)	0.06
Mild/non-user	1.00 (Reference group)	
Interpersonal victimization (2+)	1.82 (1.15, 2.89)	0.01

Female Internet users (cont)

<i>Youth characteristics</i>	<i>AOR (95% CI)</i>	<i>P-Value</i>
Internet usage characteristics		
Harasser of others online		
	4.07 (2.48, 6.68)	<.001
Interactive Internet use		
Frequent	3.21 (1.79, 5.77)	<.001
Moderate	2.12 (1.34, 3.37)	<.001
Infrequent	1.00 (Reference group)	
Most frequent Internet activity		
Chat room	3.10 (1.62, 5.93)	<.001
Instant Messaging	1.34 (0.68, 2.62)	0.39
Email	1.30 (0.81, 2.07)	0.28
All other	1.00 (Reference group)	

Emotional distress among sexual solicitation targets



*p<.05

Summary

Self-reported major depressive symptomatology is significantly related to the report of unwanted sexual solicitation

- All youth: OR = 3.53, CI: 2.19, 5.71
- Among males: OR = 5.90, CI: 2.79, 12.49
- Among females: OR = 2.33, CI: 1.25, 3.45

After adjusting for other significant characteristics, a relationship persists among otherwise similar males, but not females:

- Males: AOR = 2.72, CI: 1.15, 6.40
- Females: AOR = 1.40, CI: 0.65, 2.99

Study Limitations

- Cross sectional data
- Definition of depressive symptomatology not a measure of "caseness" of major depression
- Potential undercounting of some populations (i.e., non-English speaking youth, households without a telephone)

Implications for public health researchers

- The Internet is an influential environment that is shaping and affecting youth today
- If we are to understand and identify positive and negative risks young people face, the Internet must necessarily be on the forefront of the research agenda.

Implications for health practitioners

- As more youth go online, Internet-related 'conditions' will be more common
- Questions about the Internet should be integrated into the well-being check

Future Studies

Future studies should:

- Investigate the temporality of events
- Identify additional subpopulations of vulnerable youth

Conclusion

Results suggest a cross-sectional relationship between self-reported depressive symptomatology and increased odds of unwanted sexual solicitation online.

Understanding the complex interaction between mental health and online interactions, especially the influence of malleable characteristics such as depressive symptomatology and Internet usage, is an important area of emerging research.

Contact Information

Michele Ybarra
Internet Solutions for Kids, Inc.
74 Ashford
Irvine, CA 92618
Michele@ISolutions4Kids.org

Additional measures and indicators

Internet use	Interactive Internet activity*, most frequent Internet activity, average daily use, Internet Service Provider, Harassment towards others
Psychosocial indicators	Substance use**, # of close friends, frequency of interaction, # of life challenges, # of interpersonal challenges, physical/sexual victimization
Demographic characteristics	Age, household income, race/ethnicity, sex

* Additional information about Interactive Internet factor

Exploratory factor analysis identified a latent variable described as "Interactive Internet activity" (eigenvalue>1). Factor scores were used to categorize respondents into one of three groups: 1) highly interactive (1 or more SD above the mean), 2) average interactive (scores within 1 SD of the mean), and 3) less than average (1 or more SD below the mean; reference group). Included variables were:

- using the Internet (ever) for Instant messaging, emailing, downloading files, updating a web page, connecting to a news group, visiting chat rooms, and looking up movie information;
- logging onto the Internet from home versus all other places;
- using the Internet five or more days a week;
- self-rated Internet expert (almost or definitely) versus being less skilled;
- importance of Internet to self (very, extremely) versus less importance.

** Additional information about substance use factor

Youth respondents were asked about the frequency of use in the previous year for five types of substances:

- Tobacco
- Alcohol
- Inhalants
- Marijuana, and
- All other drugs.

Each was dichotomized (4 or more times vs. fewer) to put the variables on the same scale as other variables included in the exploratory factor analysis. One factor was identified (eigenvalue>1), which included all five variables. Because of the data distribution of the sum of the five variables, total scores were categorized into three groups: low users (1 or more SD below the mean; reference group), average users (scores within 1 SD of the mean), and heavy users (1 or more SD above the mean).