

## Comparisons of Internet usage characteristics by youth self-reported depressive symptomatology

by  
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\* 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., Alexander, C., & Mitchell, K. J. (2005). Depressive symptomatology, youth Internet use, and online interactions: a national survey. *Journal of Adolescent Health, 36*, 9-18, or by contacting CIPHR for further information.



## Background

The first step in building a successful targeted intervention online is to understand how young people *use* the Internet.

This is especially true for potentially vulnerable populations, such as those who demonstrate depressive symptomatology.

## Depressive symptomatology in childhood

- Significant public health burden
  - Increased risk for adult depressive episode and other disorders (Levinsohn, Rohde, Klein & Seeley, 1999; Kessler, McGonagle, Swartz et al., 1993)
  - Increased health care utilization (Wu, Hoven, Bird et al., 1999)
  - Decreased social functioning, school achievement, increased risk for substance use (Kazdin & Marciano, 1998)
- Point prevalence: 6% of youth at any time (Kessler & Walters, 1998)
- 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)

## Internet usage among youth

- Males and females are equally likely to report having used the Internet (Ridout et al., 2000).
- Females are significantly more likely to be the target of unwanted sexual solicitation online (Mitchell, Finkelhor & Wolak, 2001).
- Males and females are equally likely to be the target of Internet harassment (cyber bullying) (Ybarra & Mitchell, 2004).

## Previous studies of Internet usage and depression

- Most studies have reported that both cross-sectionally (Sanders, Field, Diego et al., 2000; Gross, Juvonen, Gable, 2002) and longitudinally (Kraut, Kiesler, Boneva, 2002), general Internet usage (i.e., the average number of days / week a youth is online) does not significantly differ by the report of depressive symptomatology.
- Each of these studies is based upon an ungeneralizable, relatively small, convenience sample.

## Problem statement & Study question

- Reported results need to be replicated in a random sample.
- More detailed measures of Internet usage need to be included.

➡ Study question: What are the characteristics of youth who use the Internet and how do these characteristics vary by depressive symptomatology?

## Youth Internet Safety Study Methodology

### Study design:

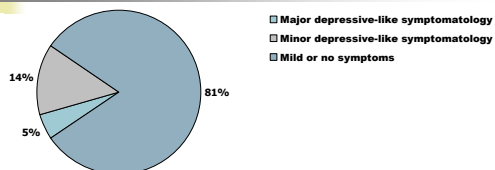
- National probability design
- Cross-sectional
- Telephone survey
- Fall 1999 and Spring 2000
- 1,501 youth and caregiver pairs
- 82% participation among contacted and eligible households

## Youth Internet Safety Study Methodology (Cont)

### Inclusion criteria

- 10-17 years old
- Use Internet at least once a month for the past 3 months
- English speaking
- Live in household for at least 2 weeks in previous year
- Caregiver and youth consent

## Measuring self-reported depressive symptomatology



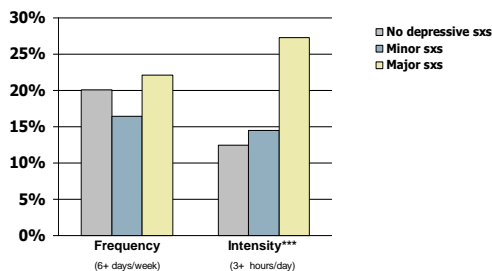
Categories based upon 9 DSM-IV symptoms:

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

## Study sample characteristics

Demographic characteristics	No depressive symptoms (N=1,210)	DSM IV-like minor depressive symptoms (N=214)	DSM IV-like major depressive symptoms (N=77)	P-Value
Age (Mean: SD)	14.1 (2.0)	14.1 (2.0)	14.7 (1.8)	p>.05
<b>Race/Ethnicity</b>				<.001
Non-Hispanic White	75.0% (907)	67.3% (144)	57.1% (44)	
Non-Hispanic other	8.8% (107)	9.4% (20)	20.8% (16)	
Hispanic	6.8% (82)	8.9% (19)	11.7% (9)	
Non-Hispanic Black	9.4% (114)	14.5% (31)	10.4% (8)	
<b>Female</b>	46.9% (567)	45.3% (97)	58.4% (45)	p>.05
<b>Income (&lt;\$20,000)</b>	7.4% (90)	9.4% (20)	11.7% (9)	p>.05

## Findings: General Internet use



\*\*\*p<.001

## Findings: Internet expertise

About a third of young people, irrespective of self-reported depressive symptomatology, rate themselves as expert Internet users (p=.055):

- Major depressive symptomatology: 35%
- Minor depressive symptomatology: 36%
- No depressive symptomatology: 32%

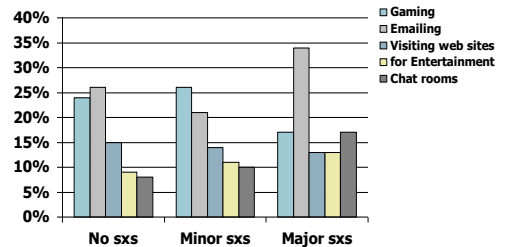
## Findings: Importance of Internet to self

One in five youth report the Internet is very or extremely important to them.

Findings suggest a trend towards more youth with major symptomatology perceiving the Internet as important as compared to youth with no symptomatology ( $p=.07$ ):

- Major depressive symptomatology: 26%
- Minor depressive symptomatology: 25%
- No depressive symptomatology: 19%

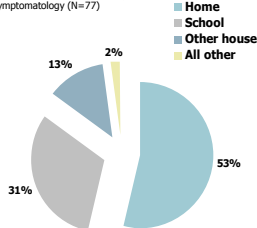
## Findings: Activity for which the Internet is most commonly used



Categories sum 100% within depressive symptomatology group.

## Findings: Most frequent access point

Access points among youth reporting major depressive symptomatology (N=77)



- The majority of all youth access the Internet most frequently at home.
- 30% of youth reporting major depressive symptomatology access the Internet most frequently at school.

## Summary

- Frequency of Internet use does not significantly vary by depressive symptomatology ( $p>.05$ ), but
- Youth with major depressive symptomatology are significantly more likely to report intense use ( $p<.001$ ).

## Study Limitations

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

## Implications

- Findings suggest that youth with depressive symptomatology are more likely to use the Internet for longer periods once logged on.
- Developers of online programs need to consider privacy issues that affect youth who do not have access to a private workstation such as in a school setting.
- Creators of website-based programs might integrate innovative e-communication strategies (e.g., chat rooms, email) into their therapeutic interventions

## Future directions

Current findings add to the pediatric intervention/prevention research base about how the Internet is used by youth at-risk for major depressive disorder.

Internet-delivered therapies may be a feasible adjunct to traditional intervention and prevention programs for this group as they are used to using the Internet for extended periods of time. Future research should focus on this very important topic.

## Conclusion

- Youth with depressive symptomatology indicate they are comfortable using the Internet and use it as frequently as other youth.
- Results support further research into the feasibility of online interventions directed at this and other vulnerable youth populations.

## Appendix A: Youth Internet Safety Study Questions about Internet use

- **Importance to self:** How important is the Internet in your life, on a scale of 1 to 5, with 1 being not at all important and 5 being extremely important?
- **Internet expertise:** How much experience do you have using the Internet, on a scale of 1 to 5, with 1 being a beginner and 5 being an expert?
- **Frequency:** How many days in a usual week do you use the Internet?
- **Intensity:** How many hours are you online on a usual day when you use the Internet?
- **Most frequent Internet activity:** Of the things you mentioned, what are the two things you currently spend the most time doing? [Prompting question: In the past year, have you used the Internet to (read list): go to web sites; use email; use Instant Messages; Go to chat rooms (private or open); play games; for school assignments; to buy something or check prices for something; for entertainment, like to go to sites about movies, sports or music?; to download software or files; to connect to a message board or newsgroup; to create or maintain a web page; to connect to America On-line (AOL)?]
- **Access point:** Of the places you just mentioned, in the past year, where is the computer you use most often to get on the Internet? [Prompting question: During the past year, have you used the Internet from a computer at (Read list): your home; your school; a public library; someone else's home; any other place.]

## Appendix B: Youth Internet Safety Study Questions about Depressive Symptomatology

- In the last month, was there ever a time of two weeks or longer when you were feeling unhappy, bummed out, depressed or down most of the day or nearly everyday?
- What about a time of two weeks or longer in the last month when you lost interest in the things that you usually like to do?
- In the last month, did you experience any of the following (Read list):
  - Lost or gained weight without trying
  - Slept a lot more or less than usual
  - Had a hard time sitting still
  - Felt tired all of the time
  - Felt worthless or guilty
  - Had a hard time thinking or concentrating
  - Had thoughts about hurting or killing yourself
  - Felt so down it was hard to do you school work
  - Felt so down that you didn't care if your hair or your clothes were dirty or sloppy
  - Felt like you couldn't do anything right