

## Healthy Minds Study: Assessing the Economic Case for Student Mental Health



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## Presentation Outline

1. Overview of Healthy Minds Study
2. New findings on help-seeking
3. Academic success and mental health  
(economic case for services/programs)

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## 1. Overview of the Healthy Minds Study

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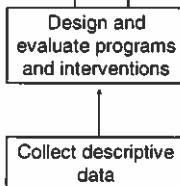
## Funders

- Initial development in 2005 supported by:
  - Blue Cross Blue Shield of Michigan Foundation
  - U-M Comprehensive Depression Center
  - U-M Office of the Vice President for Research
  - McNerney Award (U-M Health Mgt & Policy)
  - U-M School of Public Health
- In national study, funding for data collection is provided by each participating school and/or affiliated organizations (e.g., Virginia Dept. of Health, Univ. Wisconsin state system)

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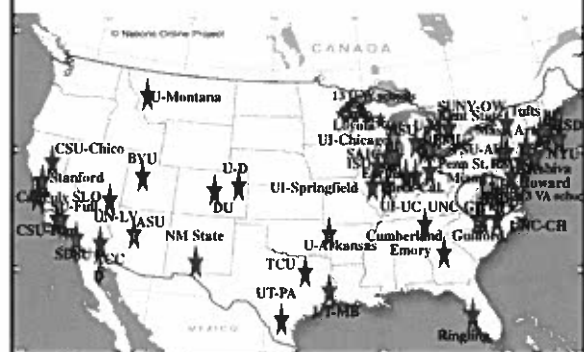
## Broad Motivation for Study

*How can we invest most efficiently in the  
mental health of college students (What are the  
returns from potential interventions)?*

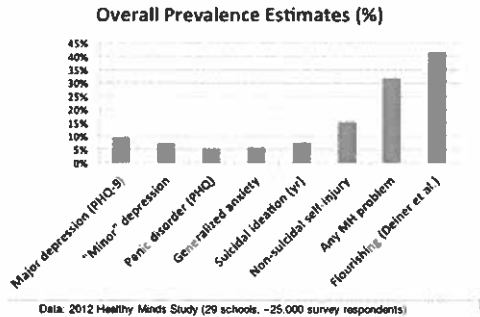


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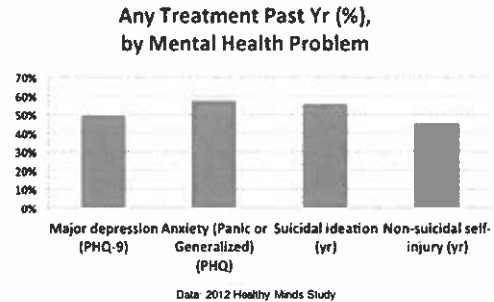
## Healthy Minds schools, 2007-2012



**Finding #1: High Prevalence of Mental Health (MH) Problems, But also Positive MH**



**Finding #2: About Half of Students with Mental Health Problems Receive Treatment**



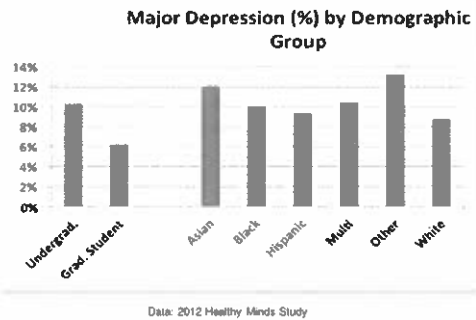
**Finding #3: When Provided, Depression Treatment is Less than "Minimally Adequate" in ~50% of Cases**

- Among students with significant depressive symptoms and some treatment in past year, 57% received "minimally adequate" depression care (4+ psychotherapy visits or 2+ months of antidepressant medication)
- Among all students with past-year depression, 22% received minimally adequate care

(These findings from 2009 Healthy Minds only)

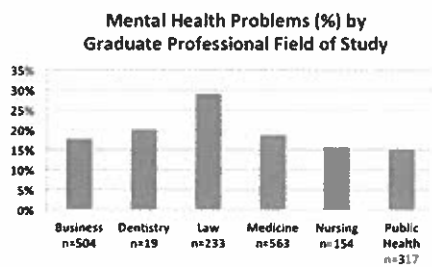
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**Finding #4: Variation in Mental Health across Student Subgroups**



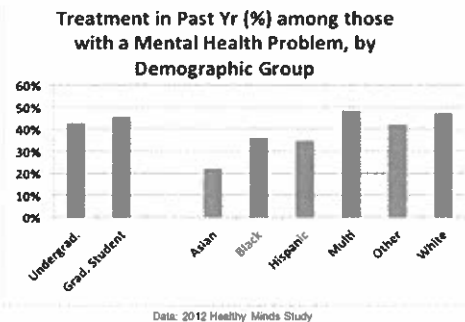
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**Finding #5: Variation in Mental Health across Graduate Professional Fields of Study**



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**Finding #6: Variation in Treatment Use across Subgroups**



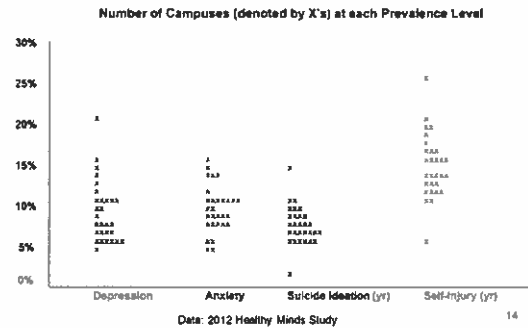
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### Finding #7: Risk/Protective Factors

- Risk factors (negative correlation w/ mental health)
  - Financial stress (both past and present)
  - Experienced discrimination
- Protective factors (positive correlation)
  - Social support
  - Religiosity
  - Living on campus

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### Finding #8: Variation across Campuses



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### Finding #8 (cont'd)

- On the other hand, little apparent variation across groups of campuses defined by:
  - Public versus private
  - Enrollment size
  - Academic rank

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### New Alcohol Survey in Healthy Minds

- Toben Nelson, Co-Investigator  
University of Minnesota Alcohol Epidemiology program ([tnelson@umn.edu](mailto:tnelson@umn.edu))
- Focus on:
  - Alcohol and other drug use prevalence
  - Interactions with mental health and/or prescription drug use
  - Intervention/treatment need
  - Service utilization / barriers to seeking services
  - Satisfaction with services

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### New Study on Disordered Eating

- U-SHAPE: <http://www.umich.edu/~ushape/>
- PIs: Sarah Lipson and Suzanne Dooley-Hash
- Seed funding from the Global Foundation for Eating Disorders ([www.gfed.org](http://www.gfed.org))
- Survey of Michigan students in fall 2012, Michigan State students in winter 2013
- More information: [sklipson@umich.edu](mailto:sklipson@umich.edu)

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### Projects Building on Healthy Minds (#1)

- *e-Bridge to Mental Health* online intervention
  - PI: Cheryl King (University of Michigan)
  - Funder: NIMH (2009-2012)
- Students are invited by email to online screen for suicide risk, then receive personalized feedback
- "Positive screens" not already in treatment are invited to correspond anonymously with counselor trained in motivational interviewing

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### Projects Building on Healthy Minds (#2)

- Peer effects in mental health among college students
  - PI: Daniel Eisenberg (University of Michigan)
  - Funder: W.T. Grant Foundation (2009-2011)
- Study design based on “natural experiment” of randomly assigned college roommates

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### Projects Building on Healthy Minds (#3)

- Evaluation of Mental Health First Aid training for resident advisors (RAs)
  - Co-PIs: Nicole Speer (WICHE) and Daniel Eisenberg
  - Funder: NIMH (2009-2011)
- 32-campus randomized trial to assess impacts on student communities

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## 2. New findings on help-seeking

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### Why Do Most Students with Mental Health Problems Fail to Obtain Services?

- Stigma appears to be part, but far from all, of the answer

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### Summary of Findings on Stigma

- Personal stigma low among college students
  - Only 12% of students agree with statement “I think less of someone who has received MH treatment”
- Perceived public stigma considerably higher
  - 64% agree with “Most people think less of someone who has received MH treatment”
- Personal stigma somewhat higher among: male, younger, Asian, international, religious, from a poor family

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### Stigma Findings (cont'd)

- *Perceived public stigma* not significantly associated with use of services or support
- In contrast, *personal stigma* is significantly associated with lower use of services & support
  - Our estimates suggest that lowering the population-level personal stigma by one half would result in an increase of service use among students with major depression from 44% to 60%

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## If Not Stigma, Then What?

Attitudes/beliefs: students with untreated MH problem (N=2,651)

BARRIERS:	stigma high	tx not helpful	no perceived need	N	%
Group 1	X	X	X	49	2%
Group 2	X	X		41	2%
Group 3	X		X	74	3%
Group 4	X			47	2%
Group 5		X	X	348	13%
Group 6		X		323	12%
Group 7			X	868	33%
Group 8				894	34%

## What is Going on with Groups 7 & 8?

- Group 7 (low stigma, believes tx helpful, no perceived need):
  - prefer to deal with problems on one's own (53%)
  - thinks stress is normal in school (47%)
  - gets support from family/friends (42%)
  - questions how serious issues are (36%)
  - doesn't have time (29%)
- Group 8 (low stigma, believes tx helpful, perceives need):
  - questions how serious issues are (62%)
  - prefers to deal with problems on one's own (60%)
  - doesn't have time (58%)
  - thinks stress is normal in school (59%)
  - gets support from family/friends (44%)
  - financial reasons (38%)

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## Interventions for Groups 7 & 8?

- Anti-stigma, education, and awareness campaigns may have little impact
- May be useful to borrow lessons from other contexts where people do not have strong objections, yet fail to engage in "healthy" behaviors (e.g., exercise, diet, preventive screening, even saving for retirement!)

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## Role of Time Preferences and Procrastination?

- Is depression related to present-orientation (discounting of future)?
- Is lack of help-seeking a form of procrastination?

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## Empirical Analysis of these Questions

- Healthy Minds Study (2011)
  - Large, cross-sectional (N=8,806, 11 institutions)
- College Transition Study Replication (CTSR)
  - Panel with five monthly surveys (Aug-Dec 2010) at one institution (Univ. Michigan)
  - 281 first-year and transfer undergraduates
  - PI: Steve Brunwasser

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## Findings

- Depressive symptoms significantly associated with present-orientation (discounting the future) and procrastination tendencies
- Procrastination tendencies associated with lower likelihood of receiving treatment
- Implications for help-seeking interventions?

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## 2. Academic Success and Mental Health (and the Economic Case for Programs/Services)

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### Brief Conceptual Discussion: Why Might Mental Health Affect Academic Outcomes?

- Depression, anxiety, eating disorders, etc. may affect: energy, concentration, cognitive ability (e.g., memory and processing speed), sleep (amount and quality), optimism about the future (and willingness to invest)
- Result:
  - Less time on schoolwork
  - Lower productivity during time on schoolwork
  - Less efficient allocation of time (e.g., all-nighters to catch up; missing deadlines and class)

### Strengths of our Study

- Rich measures:
  - Widely-validated mental health screens (e.g., PHQ-9)
  - Outcomes (GPA, retention) from administrative data (not self-report)
  - Detailed covariates including personal characteristics and past academic performance (cumulative college GPA, high school GPA, SAT/ACT scores)
- Large, randomly selected sample from full student population: ~3,000 survey respondents (2005 pilot Healthy Minds Study at University of Michigan)
- 3 year follow-up period (2005-2008)
- Focus on mental health symptoms, not use of counseling, to minimize selection bias

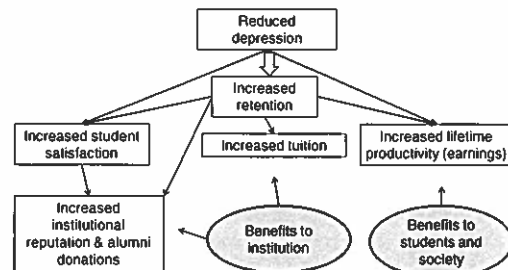
### Key Results (1): Mental Health and Retention

- Depression (PHQ-9 score) is a significant predictor of dropping out
- 10 point lower PHQ-9 score
  - ⇒ reduction in risk of dropping out by a multiple of 0.6 (e.g., from 10% to 6%)

### Key Results (2): Mental Health and GPA

- Depression (PHQ-9 score) is also a significant negative predictor of (same-semester) GPA
  - 10 point lower PHQ-9 score
    - ⇒ 9 point increase in GPA percentile
- Co-occurrence of depression and anxiety associated with a significant additional drop in GPA.
- Symptoms of eating disorders also associated with lower GPA (in longitudinal analysis, but not in cross-sectional analysis)

### Economic Case for Addressing Student Mental Health



## Calculating Economic Benefits of Reducing Student Depression

- Benefits from student satisfaction (reputation and alumni donations) are hard to quantify
  - But note in 2010 Healthy Minds (26 schools):
    - Highly depressed (PHQ  $\geq$  15):  
50% satisfied w/ school, 18% likely to donate
    - Not highly depressed (PHQ < 15):  
78% satisfied w/ school, 27% likely to donate
- We focus on more easily quantified benefits: tuition and lifetime earnings

## Example Calculation

### Assumptions:

- Student population = 10,000
  - Depressed: 10% (1,000)
  - Non-depressed: 90% (9,000)
- Drop-out rates (per year)
  - Depressed: 30% (300)
  - Non-depressed: 18% (1,620)
  - Overall: 19.2% (1,920)
- Average effect of treatment = 5 pt reduction in PHQ-9
- 5 pt reduction in PHQ-9 -> Reduces drop-out probability from 30% to 24% (halfway down to 18%)

## Example (cont'd)

- Hypothetical program: deliver treatment to 500 depressed students (half of depressed population)
- Without program: 500 students ->  $500 \times 30\% = 150$  dropouts
- With program: 500 students ->  $500 \times 24\% = 120$  dropouts
- Drop-outs averted = 30 students
- 30 retained students -> ~60 student-years of tuition (assuming 2 extra years per student)
- +\$1.2 million in tuition (assuming \$20K/yr tuition)
- +\$3 million lifetime earnings (+\$50K per college year)

## Example (cont'd)

- Costs of program?
  - <\$500,000 (e.g., 1 psychiatrist FTE + 3 therapist FTEs)
- Conclusion: depression programs can be justified by “business case,” just from institutional perspective
- Even more so from societal perspective
- Business case does not account for most direct benefits (increased wellbeing, reduced suffering)

## Key Caveats

- Still uncertainty about effect of mental health on retention
- Despite rich measures, there may have been unmeasured factors (“confounders”) that contributed to different outcomes between depressed and non-depressed
- Results from the University of Michigan data may not generalize exactly to other campuses

## More information

- Full manuscript describing our study on academic outcomes: [www.bepress.com/bejeap/vol9/iss1/art40/](http://www.bepress.com/bejeap/vol9/iss1/art40/)  
Eisenberg, D., Gokberstein, E., Hunt, J. (2009). Mental Health and Academic Success in College. *B.E. Journal of Economic Analysis & Policy* 9(1) (Contributions). Article 40.
- Return on investment (ROI) “calculator”:  
[www-personal.umich.edu/~daneis/roi/](http://www-personal.umich.edu/~daneis/roi/)
- [daneis@umich.edu](mailto:daneis@umich.edu)
- [www.healthymindsstudy.net](http://www.healthymindsstudy.net)

## Healthy Minds and Related References

- Eisenberg, D., Golberstein, E., Whitlock, J.L., Downs, M.F. (2012). Social Contagion of Mental Health: Evidence from College Roommates. *Health Economics* (in press).
- Eisenberg, D., Hunt, J.B., Speer, N. (2012). Help-Seeking for Mental Health on College Campuses: Review of Evidence and Next Steps for Research and Practice. *Harvard Review of Psychiatry* (in press).
- Eisenberg, D., Speer, N., Hunt, J.B. (2012). Attitudes and Beliefs about Treatment among College Students with Untreated Mental Health Problems. *Psychiatric Services* (in press).
- Eisenberg, D., Hunt, J.B., Speer, N. (2012). Mental Health in American Colleges and Universities: Variation across Student Subgroups and across Campuses. *Journal of Nervous and Mental Disease* (in press).
- Eisenberg, D., Downs, M.F., Golberstein, E. (2012). Effect of Contact with Treatment Users on Mental Illness Stigma: Evidence from University Roommate Assignments. *Social Science & Medicine* 75(6): 1122-1127.
- Eisenberg, D., Chung, H. (2012). Adequacy of Depression Treatment among College Students in the United States. Working paper. *General Hospital Psychiatry* 34(3): 213-220.
- Downs, M., Eisenberg, D. (2012). Help-Seeking and Treatment Use among Suicidal College Students. *Journal of American College Health* 60(2): 104-114.
- Hunt, J., Walkins, D., Eisenberg, D. (2012). How Do College Campuses Make Decisions about Allocating Resources for Student Mental Health? Findings from Key Participant Interviews at 10 Campuses. *Journal of College Student Development* (in press).

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## References (cont'd)

- Eisenberg, D., Nicklett, E.J., Roeder, K.M., Kirz, N. (2011). Eating Disorder Symptoms among College Students: Prevalence, Persistence, Correlates, and Treatment-seeking. *Journal of American College Health* 59(8): 700-707.
- Eisenberg, D., Hunt, J., Speer, N., Zvin, K. (2011). Mental Health Service Utilization among College Students in the United States. *Journal of Nervous and Mental Disease* 199(5): 301-308.
- Hunt, J., Eisenberg, D. (2010). Mental Health Problems and Help-Seeking Behavior among College Students (Review article). *Journal of Adolescent Health* 46(1): 3-10.
- Helmer, J., Eisenberg, D. (2009). Social Support and Mental Health in a University Student Population. *American Journal of Orthopsychiatry* 78(4): 491-499.
- Golberstein, E., Gollust, S., Eisenberg, D. (2009). Perceived Public Stigma and Help-seeking in a Longitudinal Sample of College Students. *Psychiatric Services* 60: 1254-1256.
- Eisenberg, D., Golberstein, E., Hunt, J. (2009). Mental Health and Academic Success in College. *B.E. Journal of Economic Analysis & Policy* 9(1) (Contributions): Article 40.
- Eisenberg, D., Downs, M., Golberstein, E., Zvin, K. (2008). Stigma and Help-seeking for Mental Health among College Students. *Medical Care Research & Review* 65(5): 522-541.
- Zvin, K., Eisenberg, D., Gollust, S., Golberstein, E. (2009). Persistence of Mental Health Problems and Needs in a College Student Population. *Journal of Affective Disorders* 117(3): 180-185.
- Cranford, J., Eisenberg, D., Serras, A. (2009). Substance Use Behaviors, Mental Health Problems, and Use of Mental Health Services in a Probability Sample of College Students. *Addictive Behaviors* 34(2): 134-145.
- Gollust, S., Eisenberg, D., Golberstein, E. (2008). Prevalence and Correlates of Self-Injury among University Students. *Journal of American College Health* 56(5): 491-499.

## References (cont'd)

- Golberstein, E., Eisenberg, D., Gollust, S. (2006). Perceived Stigma and Mental Health Care Seeking. *Psychiatric Services* 59: 392-399.
- Eisenberg, D., Gollust, S.E., Golberstein, E., Helmer, J.L. (2007). Prevalence and Correlates of Depression, Anxiety and Suicidality among University Students. *American Journal of Orthopsychiatry* 77(4): 534-542.
- Eisenberg, D., Golberstein, E., Gollust, S.E. (2007). Help-seeking and Access to Mental Health Care in a University Student Population. *Medical Care* 45(7): 594-601. (Appendix with survey items)

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