

Insights from a Graduate Student Mental Health Study and a Promising Initiative

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Road Map

- 1 Graduate Student Mental Health Study
 - Motivation and Overview
 - Findings: Mental Health
 - Findings: Experiences in the Program
 - Recommendations
- 2 A Promising Initiative

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Motivation

Our motivation was a suicide in the MIT Economics PhD program

Objectives were to understand:

- ① The prevalence and severity of mental health issues in Economics PhD programs
- ② Student experiences in PhD programs
- ③ Potential connections between experiences and mental health

And to:

- ④ Make recommendations on steps we could all take to improve student mental health

**Study done jointly with Matthew Basilico (Harvard Medical School)
and Paul Barreira (Harvard University Health Services)**

Survey Structure

- Online (link sent by e-mail to students at 8 U.S. departments)
- Included clinically validated instruments that measure prevalence and severity of mental health conditions
- Also included questions on student academic, health, and personal backgrounds, as well as on experiences with peers, research, and advising in the department
- Student survey: Fall 2017 (25 min)
- Faculty survey: Fall 2017 (10 min)
- Student follow-up survey: Spring 2018 (10 min)

Basic Demographic Stats

Programs	Total invited	Total responded	% responded	% of all responses
UC Berkeley	131	71	54.2%	13.8%
Columbia	149	71	47.7%	13.8%
Harvard	190	73	38.4%	14.2%
MIT	130	76	58.5%	14.8%
Princeton	131	55	42.0%	10.7%
UC San Diego	127	50	39.4%	9.7%
U of Michigan	163	66	40.5%	12.9%
Yale	117	51	43.6%	9.9%
Total	1138	513	45.1%	100.0%

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Depression: Patient Health Questionnaire (PHQ-9)

- Commonly used. Threshold of ≥ 10 : Sensitivity 88%; Specificity 88% (Kroenke et al 2001).

PHQ-9

Q485 Over the last 2 weeks, how often have you been bothered by any of the following problems?

	Not at all (0)	Several days (1)	More than half the days (2)	Nearly every day (3)
1. Little interest or pleasure in doing things (1)	☐	☐	☐	☐
2. Feeling down, depressed, or hopeless (2)	☐	☐	☐	☐
3. Trouble falling or staying asleep, or sleeping too much (3)	☐	☐	☐	☐
4. Feeling tired or having little energy (4)	☐	☐	☐	☐
5. Poor appetite or overeating (5)	☐	☐	☐	☐
6. Feeling bad about yourself - or that you are a failure or have let yourself or your family down (6)	☐	☐	☐	☐
7. Trouble concentrating on things, such as reading the newspaper or watching television (7)	☐	☐	☐	☐
8. Moving or speaking so slowly that other people could have noticed? Or the opposite - being so fidgety or restless that you have been moving around a lot more than usual (8)	☐	☐	☐	☐
9. Thoughts that you would be better off dead or of hurting yourself in some way (9)	☐	☐	☐	☐

PHQ-9: Depressive Symptoms

PHQ-9 Score	Category	All	Male	Female	US Undergrad	Non-US Undergrad
0 - 4	Minimal depression	44.6%	47.4%	40.6%	45.9%	44.1%
5 - 9	Mild depression	37.7%	36.2%	41.1%	37.1%	38.5%
10 - 14	Moderate depression	11.9%	11.8%	12.0%	11.8%	12.2%
15 - 19	Moderately severe depression	4.4%	3.7%	4.6%	3.5%	4.4%
20 or greater	Severe depression	1.4%	0.9%	1.7%	1.7%	0.7%
>= 10	Moderate or severe depression	17.7%	16.4%	18.3%	19.2%	15.5%

Comparison to national incidence estimates:

- ***Our Survey:** ≥ 10 : **17.7%**
- **20-39 year-olds:** ≥ 10 : **7.7% (CDC 2018)**
- **All ages:** ≥ 10 : **8.1% (CDC 2018)**
- **Harvard graduate students:** ≥ 10 : **23.6% (Dench et al. 2020)**

Anxiety: Generalized Anxiety Disorder (GAD-7)

- Commonly used. Threshold of ≥ 10 : Sensitivity 89%; Specificity 82% (Spitzer et al 2006).

Q496 Over the last 2 weeks, how often have you been bothered by any of the following problems?

	Not at all (0)	Several days (1)	More than half the days (2)	Nearly everyday (3)
1. Feeling nervous, anxious or on edge (1)	☐	☐	☐	☐
2. Not being able to stop or control worrying (2)	☐	☐	☐	☐
3. Worrying too much about different things (3)	☐	☐	☐	☐
4. Trouble relaxing (4)	☐	☐	☐	☐
5. Being so restless that it is hard to sit still (5)	☐	☐	☐	☐
6. Becoming easily annoyed or irritable (6)	☐	☐	☐	☐
7. Feeling afraid as if something awful might happen (7)	☐	☐	☐	☐

GAD-7: Anxious Symptoms

GAD-7 Score	Category	All	Male	Female	US Undergrad	Non-US Undergrad
0 - 4	No anxiety	51.2%	56.0%	43.5%	51.1%	52.2%
5 - 9	Mild anxiety	31.2%	28.1%	37.3%	32.6%	29.8%
10 - 14	Moderate anxiety	13.3%	12.2%	14.1%	12.4%	14.0%
15 or greater	Severe anxiety	4.3%	3.7%	5.1%	3.9%	4.0%
>= 10	Moderate or severe anxiety	17.6%	15.9%	19.2%	17.9%	16.9%

Comparison to national incidence estimates:

***Our Survey: ≥ 10 : 17.6%**

Studies of US adults over last 25 years: ≥ 10 : not more than 6%

Harvard graduate students: ≥ 10 : 23.1% (Dench et al. 2020)

Suicidality

PHQ-9

Q485 Over the last 2 weeks, how often have you been bothered by any of the following problems?

	Not at all (0)	Several days (1)	More than half the days (2)	Nearly every day (3)
9. Thoughts that you would be better off dead or of hurting yourself in some way (9)	☐	☐	☐	☐

“Cumulative risk of suicide attempt over one year increased from .4% among outpatients reporting thoughts of death or self-harm “not at all” to 4% among those reporting thoughts of death or self-harm “nearly every day.”” (Simon et al. 2013)

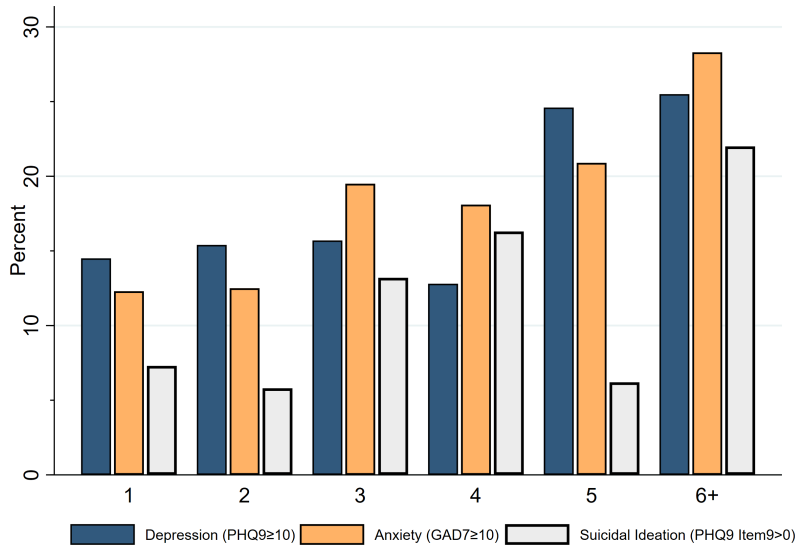
Comparison, suicidal ideation:

***Our Survey: 11.3% (several days +), 1.4% (nearly every day)**

U.S. adults: 3.9% (at some point in past year) (CDC 2015)

U.S. adults ages 18-25: 7.4% (at some point in past year) (CDC 2015)

Mental Health Issues by Year in Program



Treatment

	Year in Graduate Program						Total
	G1	G2	G3	G4	G5	G6+	
Of those w/moderate-severe depression or anxiety, % in treatment	14.3%	15.0%	26.3%	35.0%	33.3%	27.3%	25.2%

Comparison, % of people w/moderate-severe symptoms in treatment:

- ***Our Survey: 25.2%**
- **Harvard graduate students: 41.4% (Dench et al. 2020)**
- **Adults in labor force: 50% (Kessler et al. 2008)**

Summary: Mental Health Findings

- Moderate-severe symptoms of depression, anxiety are 2-3X more prevalent among economics PhD students than in general population
- Suicidal ideation is 1.5X more prevalent than in highest risk group in general population
- Symptom prevalence among economics students is better than among other grad students, but...
- Econ students are much less likely to seek treatment when facing serious symptoms than other grad students
- Prevalence of serious symptoms is highest in final years of PhD: 23% of G6+ students experienced suicidal ideation in two-week period

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Summary: Experiences in the Program

- Echoing previous literature: strong social support, meaning & purpose in work are all negatively correlated with depression, anxiety, suicidality
- Quality of advising relationships is more important than frequency of meetings
- It's just as hard for students to talk about mental health with advisers as it is for them to talk about non-academic career options
- Only 20% of women (35% of men) feel comfortable speaking in seminars
- More than 21.5% of women (13% of men) have experienced sexual harassment in their department. In 62.5% of cases, harasser was another grad student

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Where Do We Go From Here?

Things to work on:

- Raise awareness of mental illness prevalence and characteristics
- Decrease stigma of treatment, improve access
- Increase collaboration & sources of **quality** social connections
- Improve advising relationships so that they are honest and supportive, in addition to evaluative
- Help students find meaning and purpose in their projects
- Make seminar and departmental culture more supportive and constructive

Concrete Suggestions

- Departmental leadership & faculty could talk early, openly, and seriously with students about the importance of mental health care
- Faculty could stress the value of collaborating with other students, across years in the program, and building friendships
- Support student initiatives to build a happier, friendlier work environment (apply design thinking)
- Connect each student with a faculty volunteer early in the program whose job is purely to advise and support
- Steer students towards researching questions that they care about
- Partner with campus mental health services for interventions (e.g., Cognitive Behavioral Therapy, building a growth mindset, etc.)

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Harvard's Graduate Student Mental Health Initiative

Our study has become a blueprint for Harvard's Graduate Student Mental Health Initiative:

- ➊ Respected campus health official (Paul Barreira) meets with grad student leadership in given department
- ➋ Grad students contribute 5 or so learning environment questions, other survey questions are fixed
- ➌ Department Faculty and student leaders promote the completion of the department-specific survey
- ➍ Results shared in aggregated form w/students, faculty, and admin
- ➎ Department forms small working group (students, faculty, and admin) tasked with identifying and implementing reforms

Takeaways

- Faculty, students, admin talk to each other in a moderated space, perform community service together – likely has mental health benefits on its own
- Everyone feels like survey and reforms are being done by them and with them, not to them
- Campus health official acts as a facilitator and administers follow-up surveys every 2 years, but ultimately needs grassroots energy for this to succeed
- Over 6 years, initiative has engaged 30 different PhD programs and 4,866 students, with generally positive feedback
- Could be a model for other campuses