RESEARCH IN SOCIOLOGY OF ENGINEERING

# Engineering Students' Mental Health

## Research Brief for Engineering Deans

## Research Highlights

- There are significant unmet mental health needs among engineering students nationwide, which contributes to attrition from engineering programs.
- 50% of those surveyed screened positive for a major mental health condition—including depression, anxiety, PTSD, an eating disorder, or major psychological distress.
- They screened positive for Panic Disorder at nearly 5x the rate of the general population.
- They are more than 5x as likely to experience PTSD-like symptoms than the general population.
- No significant evidence that engineering students suffer mental health issues at higher rates than other students; however, research suggests they are less likely to get help and may face unique barriers and reluctance to seeking mental health help.
- Engineering students with physical disabilities are significantly more likely to suffer from mental health issues and are 2.9x more likely to screen positive for PTSD.
- Depression spiked in May–July 2020, at the end of the first term COVID was known to be in the United States.
- Mental health disparities between White, Asian, and Hispanic/Latinx students in engineering decreased from pre-COVID to May–July 2020.
- Mental health disparities between men and women engineering students decreased from pre-COVID to May–July 2020.
- Depression rates measured in 2021 did not significantly differ from pre-COVID results.
- Major and moderate psychological distress decreased from 2019–2021.
- There is a tendency to trivialize mental health concerns in engineering education because stress is ubiquitous. This tendency is detrimental to students struggling with mental health challenges.
- Students experience a culture of silence and stigmas around mental health that is in part created by faculty who are not supportive or empathetic and by an ethos that engineering students are supposed to be smarter and tougher than students in other majors.
- Exam formats that do not allow students to see the entire exam at once and more forward and backward between parts can disadvantage students with anxiety or whose brains work in certain ways.
- Misleading information about how long it is likely to take to complete a degree causes extra stress and anxiety.

## Recommendations

- Create a culture of empathetic decision-making that supports rather than stigmatizes or trivializes mental health. Consider invited speakers or lecture series devoted to mental health, emails/newsletters with related content, a college-wide requirement for faculty to allow students a certain number of mental health days per semester, adding mental health

content to first-year orientation, and implementing a peer support program (see *Other Resources* below for examples).

- Share resources below with faculty and encourage them to be sympathetic, understanding, and accommodating about mental health challenges and related stigma.
- Offer guidance to encourage faculty to offer informal accommodations. Equality not same as equity. For example, they could add the following statement to syllabi: "This is a very stressful time for everybody, faculty, staff, and students included. If you're feeling overwhelmed, lost, anxious, depressed, or listless, please consider contacting university counseling services [URL]. Also, please talk to me if you need an extension for mental health or wellness reasons."
- Be up front with parents and students about programs that take most students 5 years to complete.
- Ensure that all faculty, advisors, and teaching assistants know what to do if they are worried about a student. See the Red Folder Initiative for guidance.
- Consider hiring a counselor specifically for the engineering college, which some colleges of engineering are already doing.
- Develop a plan for future transitions to online learning that ensure that faculty and students have the technology they need, including for remote labs, and that faculty have instructions for transitioning to online learning. During times of crisis, consider requiring empathetic changes to grading policies (e.g., universal pass/fail); coordinate instructional and grading decisions at a departmental or college level rather than leaving up to individual instructors, and ensure that faculty do not give more work than usual.

## Other Resources

- Publications from this project*
- Peer support program models at University of Michigan and WPI
- Additional recommendations for college leadership to support mental health
- Additional recommendations for deans to support mental health
- Promising Practices from University of California
- Faculty Guide to Supporting Student Mental Health from the Jed Foundation
- Strategies for supporting well-being from Washington University
- Tips and toolkit for supporting students with disabilities from University of Washington
- Guide for creating accessible online engineering education by Sheng-peng Wu

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