

# YEARLY CHANGES IN PHD STUDENT MENTAL HEALTH

A MICHIGAN DOCTORAL EXPERIENCE STUDY REPORT | NOV. 2025

## IN BRIEF

In this report, we take a closer look at changes in students' mental health from year to year. Our findings suggest that Ph.D. students' first to second year transition is the period in which mental health is most likely to decline, and that subsequent years are most often characterized by stable mental health. Dramatic changes in mental health are uncommon, but among students who do experience them, stress and unmet needs in their social contexts may play a major role.

### Overview

PhD students face a range of academic, financial, and personal pressures that can contribute to mental health challenges. In a previous report, *Student Stress and Well-Being*, we presented mean ratings of students' well-being and stress and found that, on average, students' mental health declines over time. However, averages can mask meaningful variation in experiences.






In this report, we take a closer look at changes in students' mental health. We consider how common it is for students' mental health to decrease, hold stable, or improve from year to year and examine whether changes in mental health are associated with particular years of PhD study. Also, we look more closely at how often students experience major changes in their mental health from year to year. Finally, we consider which conditions or experiences are associated with major changes in students' mental health.

### THE DATA

The Michigan Doctoral Experience Study (MDES) is a longitudinal study of PhD students at the University of Michigan. For this report we draw on eight years of data, which includes responses from students who began their programs between Fall 2017 and Fall 2024 (N=6,446). To assess yearly changes, we only use data from students who had survey responses in two consecutive years.

### THE SCALE

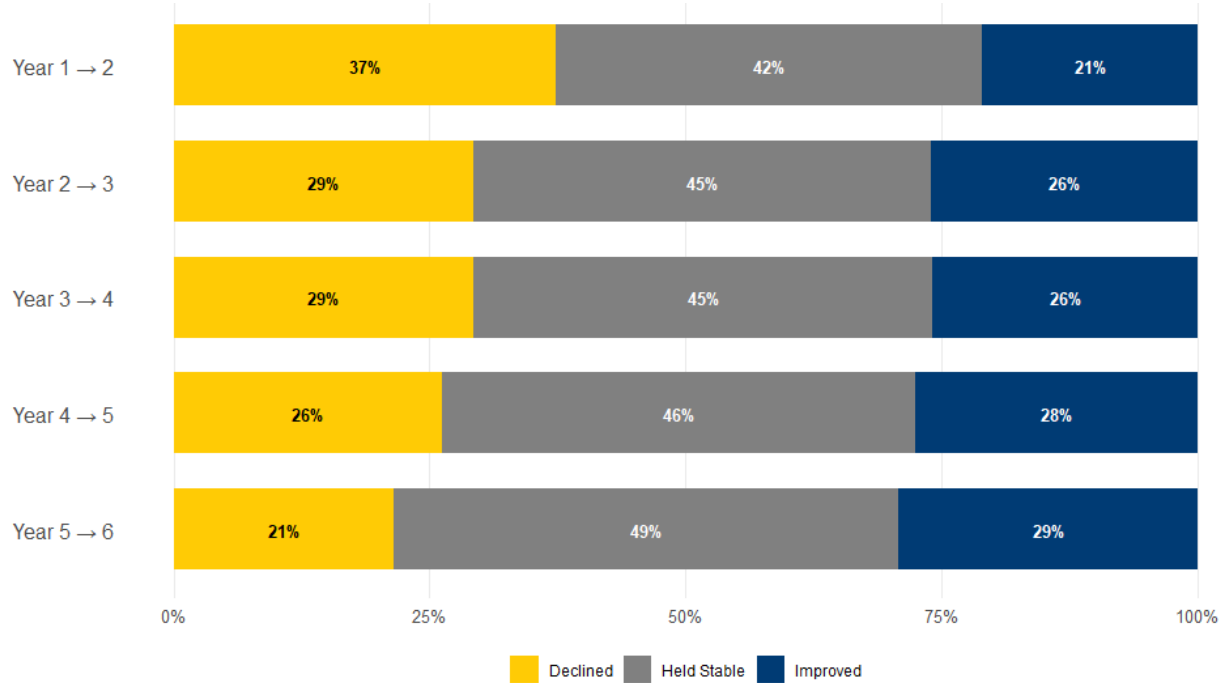
At the beginning of each academic year, MDES respondents assess the state of their mental health on a five point scale (1-5). Each point on the scale is assigned a descriptive label.

Poor (1)	Fair (2)	Good (3)	Very Good (4)	Excellent (5)
				

## Types and Timing of Mental Health Challenges

To begin, we look at how common it is for students' mental health to change over a 12 month period. **Figure 1** shows the percentage of respondents whose mental health declined, held stable, or improved when comparing two consecutive years of ratings. To see if mental health changes are more or less frequent at certain stages of PhD study, we break down the statistics by respondents' year in program. So, for instance, the first bar in the graph shows how often students' mental health declines, holds stable, or improves from the fall of their first year in their program to the fall of their second year in their program.

**Figure 1. Types of Change in Mental Health for PhD Students, by Program Year Transition**



Looking at changes from year 1 to 2, we see that 37% of students' mental health ratings declined, 42% held stable, and 21% improved. Therefore, although more students' mental health ratings declined than improved during this 12 month period, **the majority of students' mental health ratings did not change at all**. This is a trend that continues to be true in each year-to-year transition.

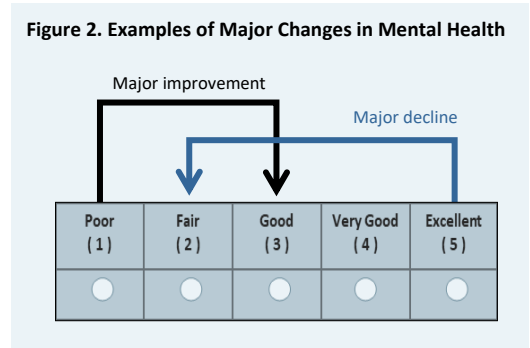
Figure 1 also shows that after the first year in their program, students become less likely to experience a decline in their mental health. **This suggests that students are more vulnerable to declining mental health in the earlier stages of their doctoral studies.**

After this first year, the frequencies for declining and improving mental health are quite similar. Although declines in mental health are less common in year 5 to 6 than other years, we are unsure if this is due to the changing nature of the sample due to many students graduating in year 5, "floor" and "ceiling" effects of the 5 point scale, and/or improvements in student's mental health at later program stages.

### Magnitude of Mental Health Changes

Individual’s ratings of their mental health on a given day can be affected by factors such as their mood or time of day. Thus, small changes in students’ mental health from one year to another may not always be consequential. However, big changes from year to year are likely to represent a substantial difference in students’ mental health status.

Thus, we examine how often students experience major changes in their mental health from one year to the next, defined as a year-to-year difference in mental health ratings that are greater than or equal to  $\pm 2$  points on the 5 point scale. For example, if a student rated their mental health as “poor” in year 1 and “good” in year 2, that would constitute a major improvement in their mental health over this 12 month period (see Figure 2). Similarly, if a student rated their mental health as “excellent” in year 3 and “fair” in year 4, that would constitute a major decline. Both would be major changes because the students’ ratings of their mental health changed 2 or more points on the scale over a 12 month period.



**Figure 3** shows how often students experience a major decline or a major improvement in their mental health from year-to-year. Since the first year of doctoral study appears to be particularly challenging, we calculate statistics for this period separately from all other years. We calculate statistics for all students combined, and then separately by students’ discipline, sex, and international and under-represented racial minority (URM) status.

**Figure 3. Major Changes in Mental Health Status, by Program Stage, Discipline, and Demographics**

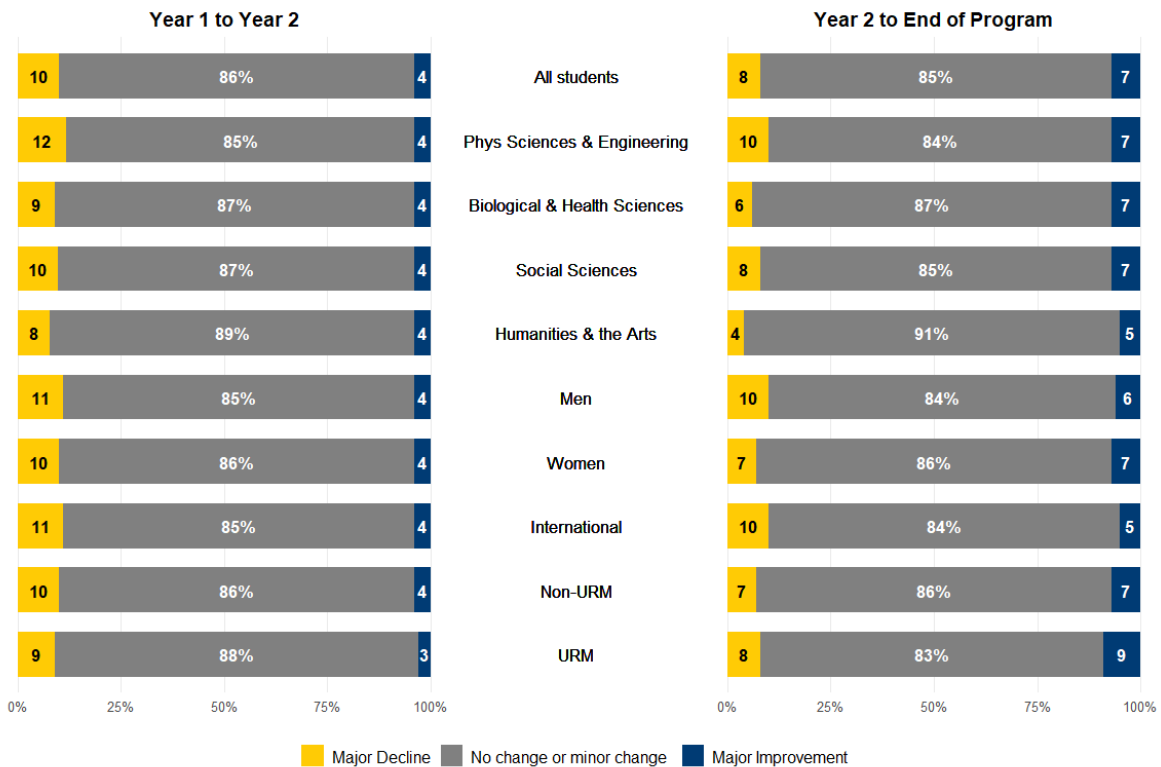
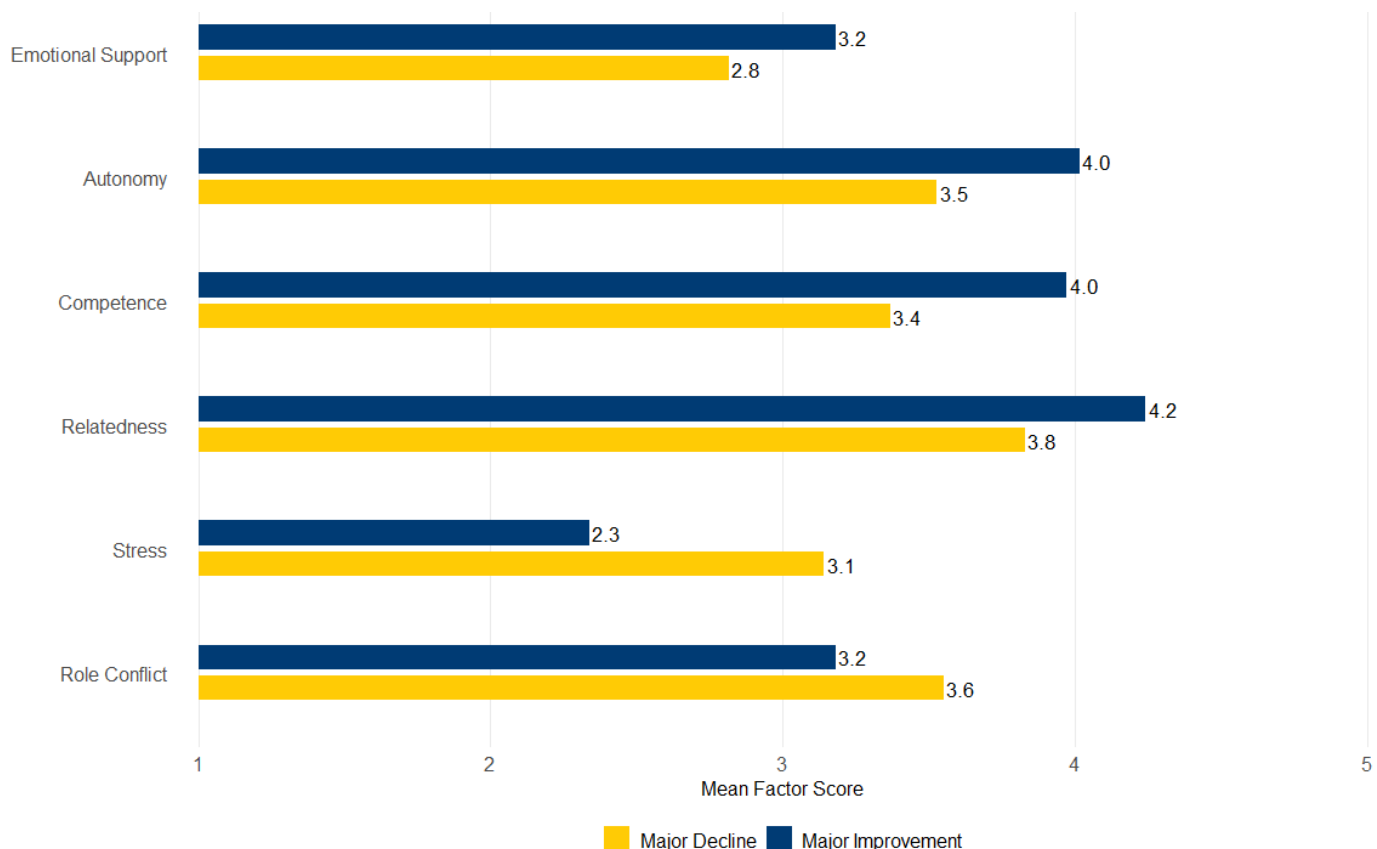


Figure 3 suggests **ratings of mental health are unlikely to change drastically from year to year**. Only 10% of students who responded to the MDES survey during year 1 and 2 of their programs experienced a major decline in mental health during those 12 months. Major declines were slightly more common for students in the Physical Sciences and Engineering than in the Humanities and the Arts, who experienced comparatively few major declines from year 2 of their programs onwards. Overall, there is little variation in the likelihood of experiencing a major decline or improvement in mental health across student discipline, sex, international, or URM status.

### What Contributes to Major Changes?

Clearly, major year-to-year changes in students' mental health aren't common. However, for students who do experience them, it is likely that something significant has happened to produce this change. In **Figure 4**, we show mean differences in several factors that previous studies have shown to be positively related to mental health: students' levels of emotional support and how well their social contexts support their need for autonomy, competence, and relatedness. We also examine two factors that previous studies have shown to be negatively related to mental health: stress levels (measured with the Perceived Stress Scale-4 scale), and role conflicts. All of these variables are measured with multiple items on a 5-point scale, with 1 indicating the lowest level and 5 indicating the highest level. For each student, we calculate their mean value for all the items in the scale. For more detail about the items and answer scales, see the Appendix.

**Figure 4. Factors that Contribute to Mental Health, By Type of Major Mental Health Change**



**There are differences in all these factors between those who had a major decline and a major improvement in mental health, but the biggest difference appears to be in stress.** Students who experienced a major decline in mental health have Perceived Stress Scale scores that are 0.8 points higher than students who had a major improvement in mental health. Additionally, they score lower on the autonomy, competence, and relatedness need satisfaction scales, receive lower levels of emotional support from family, friends, and others, and experience higher levels of conflict between their personal and professional life roles.

## Summary

Although, on average, PhD students' mental health declines over time, this report makes a strong case that changes in mental health might follow a more nuanced pattern. Specifically, we show that the first to second year transition is the most likely period of time in which mental health declines, and that subsequently there is a period of stabilization characterized most often by ongoing stable mental health ratings. Among those who do experience dramatic changes in mental health from year to year, stress and unmet needs in their social contexts may play a major role. Factors contributing to mental health changes encompass academic, personal, family, and broader life circumstances—some of which doctoral programs control, and others they do not. **Effective support for PhD student mental health requires a holistic approach that extends beyond programmatic interventions alone.** Supporting doctoral student success ultimately means supporting student well-being in its entirety—recognizing that the path to completion intersects with all aspects of students' lives.



## MORE INSIGHTS FROM MDES

[About the Study](#)

[Interactive Data](#)

[Publications](#)

[Reports](#)

[Presentations](#)

## APPENDIX

### Emotional Support Scale

To what degree were the following groups a source of emotional support to you during the past academic year?

Not a source (1)	Small source (2)	Moderate source (3)	Large source (4)	Major source (5)
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- Friends/Peers who are affiliated with your department/program
- Faculty/Staff who are affiliated with your department/program
- Friends/Peers who are NOT affiliated with your department/program
- Faculty/Staff who are NOT affiliated with your department/program
- Family members or significant others
- Counselors, therapists, or other health professionals

### Autonomy, Competence, and Relatedness Need Satisfaction Scale

Thinking about your experiences in your department/program so far, please indicate how true each statement is for you on a scale of 1 (Not true at all) to 5 (Extremely true).

Not at all true (1)	2 (2)	3 (3)	4 (4)	Extremely true (5)
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- I have freedom to chart my own path
- I feel capable at what I do
- I really like the people I interact with
- I feel confident that I can do things well
- I feel that my decisions reflect what I really want
- I feel included in the groups that I want to belong to
- I feel competent to achieve my goals
- I get along with people I come into contact with
- I feel my choices express who I really am
- I feel I am doing what really interests me
- People are generally pretty friendly towards me
- I feel I can successfully complete difficult tasks

### Perceived Stress Scale

How often during THE LAST MONTH did you:

Never (1)	Almost never (2)	Sometimes (3)	Fairly often (4)	Very often (5)
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- Feel that you were unable to control the important things in your life
- Feel confident about your ability to handle your problems
- Feel that things were going your way
- Feel that difficulties were piling up so high that you couldn't control them

### Role Conflict Scale

Please indicate the extent to which you agree or disagree with the following statements about your academic work:

Never (1)	Almost never (2)	Sometimes (3)	Fairly often (4)	Very often (5)
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- I have so much work to do that it takes away from my personal interests
- The demands of my work make it difficult to be relaxed at home
- My work makes it difficult to be the kind of friend I'd like to be
- My work makes it difficult to be the kind of family member I'd like to be

