WIP: Faculty Perceptions of Graduate Student Mental Health: A Productivity Framing

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Abstract—**Research demonstrates a growing mental health crisis in graduate education, which can contribute to productivity, departure, and well-being issues. To address this crisis and advocate for systemic change, this project explored faculty perceptions about graduate student mental health and how these perceptions intersect with direct action when student mental health challenges arise. We were guided by phenomenological inquiry to explore how faculty attitudes ($n = 3$) about mental health shape programmatic and individual decisions around supporting mental health. We thematically analyzed interviews discussing stress and mental health focused on faculty experiences. Faculty interviews demonstrated varying attitudes toward graduate student stress and mental health. Faculty desires to engage in discussions about stress or mental health were on a wide spectrum, often with work productivity guiding these discussions. Further, faculty highlighted levels of discomfort with engaging in discussions about mental health, especially with the students they work closest with. Findings indicate a need to foster faculty skill and comfort with engaging with students about their mental health while also providing clear institutional policies that support these actions to address the mental health crisis.**

Index Terms—**graduate students, mental health, faculty**

I. INTRODUCTION

Mental health is a key attribute for success in graduate programs, yet there is a growing mental health crisis in graduate education [1]. This mental health crisis can contribute to issues with productivity, departure, and well-being. Engineering students are not immune to this crisis, yet are one of the least likely disciplines to seek help for mental health [2]. Mental health is often neglected in STEM graduate programs by students, faculty, and administrators [1]. If allowed to persist, these mental health crises will exacerbate issues related to attrition and in the worst cases, injury or death [3].

Emerging research in engineering student mental health has shown that high stress and sacrifices to mental health are part of the cultural fabric of engineering [4]–[6]. Further, students are aware of these cultural defaults and are taking actions to protect and support their mental health through choices such as leaving engineering [7], [8]. While this work has highlighted student stress and mental health in engineering [6], limited work has considered the role of faculty in propagating or addressing the mental health crisis in engineering graduate education [9]. Without an understanding of the role of faculty, we cannot generate evidence-based practices to tackle long-standing cultural issues that undermine mental health and well-being. This work-in-progress seeks to fill that gap by exploring how faculty assess and engage with graduate student stress and mental health.

II. BACKGROUND AND FRAMING

Stress and Mental health are major factors in the attrition of qualified STEM MS and Ph.D. students. While the factors driving attrition are multi-faceted [10], research demonstrates that mental health is a key contributor to high attrition rates in graduate education [11]–[13]. Research indicates that approximately 40% of graduate students have anxiety, depression, or a combination of the two [12], [14]. Studies have also noted that university students are primed for mental health concerns due to risk factors such as age, transitional life stage, and increased stress compared to the general population (mental health rates of 20%) [15]. Work has shown that the organizational context of graduate school, and especially advisor leadership style and job demands, are cited as responsible factors for mental health problems [9].

While help-seeking for mental health concerns has increased at academic institutions, access to mental health resources can be limited. This results in measures such as wait lists and session limits to accommodate the increasing demand for

services [16]. This has only become more acute since the start of the COVID-19 pandemic [17], [18]. Many of the mental health resources available at academic institutions are tailored to help the undergraduate population. This increasing quantity of mental health issues and lack of support for addressing those issues represents additional growth in the mental health crisis since the last national report [1]. Despite this trend, a limited but growing body of literature is available to provide evidence-based practices for addressing the causes and persistence of mental health issues for engineering graduate students [4]–[7], [19]–[24]. This work seeks to expand on these best practices to examine the barriers to faculty engagement in promoting student mental health.

III. RESEARCH DESIGN, METHODS, AND INSTRUMENTS

The research presented in this paper is part of a larger qualitative project exploring graduate student and faculty attitudes about mental health in engineering [25]. Broadly, the project examines the institutional and individual features that influence attitudes about mental health. For this paper, we examined the following question: How do engineering faculty assess and engage with graduate students' mental health and stress? To address the research question, we used phenomenological approaches to qualitative data collection and analysis [7], [26], [27]. These approaches support a rich, nuanced approach to understanding complex phenomena, here, engineering faculty's perceptions of graduate student mental health [27].

A. Positionality

As a research team, we articulate our positionality to highlight how our interpretive lenses shape our methodological approaches and interpretations of findings [28]. The first two authors are associate professors in a college of engineering and graduate program directors. The first works in the Computer Science & Engineering department, while the second works across programs as director of the Engineering Education program. Our collective experiences working to advocate for student mental health and encountering barriers that undermined that advocacy served as the motivation to conduct this research. The third and fourth authors are engineering education Ph.D. students who are motivated by their mental health and stress experiences and those of their peers in engineering to create change. Collectively, the project team desires to shift the defaults in engineering that exacerbate the growing mental health crisis and to create cultures of care that foster engineering student well-being. The first two authors led the interviews with faculty in the sample and analysis of their responses. The last two authors served both as a check of the analytic process, audit leads, and to add insight from their lived experiences as students.

B. Participants

Participants were recruited from the faculty at a Western research-intensive land-grant university. Participants were recruited from all departments except those of the first two authors to avoid conflicts with institutional service activities (e.g., promotion and tenure committees). For this analysis, we focus on the experiences of three engineering faculty. In the following sentences, we describe the characteristics of the faculty while keeping several details detached from specific participants to ensure anonymity. Of the three faculty, one identified as a woman, and two as a man. We have used gender-neutral pseudonyms and pronouns to aid in protecting anonymity. Two faculty were associate professors at the time of their interview, and one was a full professor. Two were or had been graduate program directors for their respective programs. The faculty represent two different departments in the College.

C. Data Collection

Guided by phenomenology [27], we created a semi-structured interview protocol to explore faculty perceptions about mental health, stress, and the intersection of the two in engineering graduate programs. We asked questions about their lived experiences as graduate students and their perceptions of current graduate students' experiences in engineering programs to understand how past experiences may shape present perceptions. The interview protocol was piloted with the first and second authors and refined by the entire research team before deployment with faculty participants. Sample questions relevant to this analysis include but are not limited to, "What is your definition of stress?" "What do you think about graduate student mental health?" "What role does graduate student mental health play in graduate school?" The first and second authors both conducted interviews with the faculty participants. Interviews with faculty ranged from 60-90 minutes, were conducted over video conferencing software, and were professionally transcribed. Additionally, each interviewer generated a memo after each interview to capture ideas and interconnections that emerged during data collection [29]. The interview audio and memos served to guide a debriefing process that occurred within one week of the interview occurring [29].

D. Data Analysis

Once transcribed, all transcripts were checked to ensure they matched what participants said during the interview. This process also enhanced the researchers' familiarity with the data and participants' voices before coding [29]. An inductive approach to coding was taken to analyze the data, as existing coding schemes did not align with the goals of this project [30]. We co-coded one interview as a team, and iteratively developed descriptive codes based on sentence- and paragraph-level segments [31]. The process of co-coding allowed for rapid editing of codes and code definitions while also making explicit the intentions behind the codes. The codebook was examined at the end of the first interview to remove redundant codes, refine definitions, and collapse underutilized codes. All coding occurred in MAXQDA, a qualitative coding software. The first and second authors then independently coded the remaining two interviews using the

existing codebook, allowing new codes to emerge [32]. Finally, codes were collapsed into themes through cross-participant comparison by comparing quotes and individual evidence [30]. The results below represent the participants' shared experiences while highlighting each participant's unique elements.

IV. EMERGENT THEMES

This work focuses on the faculty's perceptions of graduate students' mental health and stress. We have reported results from the student perspective elsewhere. The results of the qualitative analysis indicated two emergent themes related to faculty's perceptions of graduate student mental health: 1) Productivity is how faculty assess mental health; and 2) Faculty disengage when mental health affects productivity. We present evidence highlighting our participants' convergence in the first theme. The evidence presented in the second theme shows the different ways faculty disengage from supporting engineering graduate students' mental health, especially as there is a closer working relationship. This highlights how participants' lived experiences influence attitudes about and actions toward mental health.

A. Theme 1: Productivity is How Faculty Assess Mental Health

All three faculty we interviewed identified productivity as a way to frame their assessment of students' stress and mental health. As a note, participants often used stress as an interchangeable proxy for mental health in their discussions. For instance, Beckett, an associate professor who had a significant amount of mentoring experience, stated that lack of productivity is how they identified stress in their students:

> "Well. I mean, I wish the answer was [I identify overwhelming stress] well. That's why I say that's not the right answer, because I wish the answer was well, but I don't think it is. Primarily, I think I look towards productivity, and productivity can be defined obviously in lots of different ways. Are the students making progress or going forward?" –Beckett

Similarly, Madison, a full professor who has students they directly advise and students advised through a graduate student development program, views dips in productivity as an explicit sign to engage with a student about stress, mental health, or other life issues:

> "And when [mental health issues] happen... I don't think I reached that state very much with students in my own experience that I've been aware. I'd like to think that I could recognize it and be reasonable about it if it did happen. And I do, I try to, when students, when I feel like they're not being productive, I try to say, "Is anything going on?" Or, "Are there things that I should know about?" and be inquisitive. Sometimes they're open with me, and sometimes they're not." –Madison

When thinking about a particular student, Madison framed their amount of stress as directly related to their productivity:

> "I imagine one of my students right now is likely, I would guess, is experiencing a good bit of stress. He is not being very productive for sure." –Madison

Approaching productivity from the mental health perspective, Riley, an associate professor, views mental health as necessary for productivity and motivation. From their perspective, an increase in mental health would likely cause an increase in productivity:

> "I believe, in my opinion, mental health can really help them be more productive, more motivated, and do that certain job in a shorter amount of time, and even exceed the initial expectation." –Riley

Notably absent in the interviews were other forms of assessment. Other assessments could range from behavioral patterns to physical manifestations of stress [33]. From the representative quotes shown above and the remainder of the interviews, we saw that participants consistently framed productivity as how they assessed their students' mental health and stress.

B. Theme 2: Faculty Disengage When Stress/Mental Health Affects Productivity

A second, more complex theme was observed from the interviews showed that as stress and mental health issues threatened student productivity, faculty were *less* likely to engage with their students, rather than more. This mechanism of disengagement was most clearly highlighted by Madison:

> "And I like [addressing student mental health] and I like doing it better when it's not my own student. No, seriously, because my own students, I want them to be productive. I don't want to hear that they're having this issue or that issue, but if a student that's working for someone else comes in and they have an issue and they want to talk about it and I can help them, then that feels rewarding." –Madison

Madison showed that they see engaging with stress and mental health as a threat to productivity in their group, and was less willing to engage with their own students for fear of negative impacts. This sits in contrast to students that are not in their group. With these outside students, Madison sees value in engaging in these conversations.

Riley, who has a student support role, noted that even when engaging in stress or mental health, following up with students about their mental health and stressors was only an "as necessary" activity:

> "... I provided some suggestions of communicating better with the advisor, if there are any class-related projects and maybe she could ask for a week of no weekly meetings or maybe some reduced project task. I think that worked fine. She was happy a couple of months. Of course, I didn't want to follow-up unless necessary. A couple of times where I was seeing her on the hallway, just like, "Oh, how's everything?" She looked happy." –Riley

Throughout the course of the interview, Riley mentioned that mental health services should be the job of the graduate school and graduate student association. They often noted these resources to create distance between their role and the role of others who should take on this workload:

> "I think [the] graduate school should do a better job in terms of reaching out with graduate students, providing support, [Graduate Student Association]. When they are with a group of other graduate students, I think that they may feel better rather than talking to the advisor. Facing a lot of deadlines and all that. That might be less stressful in order to share their stresses and hear what they have to say. I hope graduate school and GSA, they initiate some activities or some initiatives to address the stress and mental health." –Riley

These statements both reinforce the productivity framing of stress and mental health discussed in the prior theme and explain that engaging in mental health might interfere with student productivity. So Riley's answer is to separate the two and encourage students to seek mental health resources with the graduate student association rather than their advisors.

Finally, when talking with Beckett, they noted an additional reason to disengage with students on stress and mental health:

> "Yeah. You ask about stress. I mean, those were very limited encounters, but that for sure was a stressor for me as a faculty member, too. I mean, there's always the fear of screwing up an equation in class but those repercussions are pretty minimal. We can fix it next time, but sending a person to the wrong place or giving them the wrong advice from a mental health perspective, when it is a "serious consequence and or situation," that's that scares the hell out of me. I don't want to be the person, whether there's any responsibility legally, but just morally for myself, I don't want to put myself or the student in that position." –Beckett

Beckett described their perceived danger in engaging in conversations about stress and mental health, being ineffective, doing damage, and potentially exposing them to legal liability or moral jeopardy. This fear of being wrong led them to disengage when they saw problems around mental health. This is in stark contrast to conversations about connecting students to reproductive, economic, and immigration resources on and around campus.

We see that our participants do not want to engage with the students who are closest to them and have constructed narratives about who should be engaging or why they do not want to engage with the mental health and stress of engineering graduate students. To be clear, these were all faculty who mentioned caring about stress and mental health in the interviews who were disengaging. In summary, this theme shows that when a student exhibits signs of stress and mental health, and such issues threaten a student's productivity, these faculty members will disengage rather than engage.

V. Discussion

Our emergent analysis highlighted two themes: productivity as a sign of mental health and disengaging when mental health challenges emerge. The assessment of mental health and stress through the lens of productivity is not unfounded in the literature. Previous work has shown that engineering graduate students will diminish their engineering work goals to prioritize their mental health and well-being [7]. However, this practice is often a late-stage response to ongoing persistent issues that undermine graduate students' mental health. As such, faculty need development in tools and processes to better assess graduate student mental health earlier [5].

The second theme in this work indicates that even when faculty notice mental health issues emerge, they are likely to disengage. The practice of disengagement only increased as the advisor was closer to the student. Given that engineering students are the least likely population to seek out mental resources, the people closest to them need to be willing to support them. We are not arguing for engineering faculty to become mental health counselors but rather advocating for them to serve as part of a community to support students in need [3], [33]. This is especially important, since students don't often recognize issues with their own mental health until physical signs appear [34]. One potential solution to this challenge, mentioned by our participants, is to assign students a secondary mentor who can supplement the support students get from their advisor but would be removed enough for student productivity to not be their primary concern.

VI. Conclusions and Future Work

These two themes identified in this paper combine to create a mental health paradox, only observing stress and mental health through the lens of productivity, but not engaging for fear of interfering with a student's productivity. From these findings, work is needed to understand the practices that shift engineering faculty from bystanders to active participants in supporting student mental health. Additional work is also needed to understand how these results transfer to other institution types with different programmatic and support structures. We hope this work catalyzes action and change to support students and prevent the negative outcomes that can occur if mental health is left unattended.

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