Exploring the Impact of Professor and Peer Relationship on Mental Health of Undergraduate Engineering Students

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BACKGROUND

❖ Undergraduate engineering students' mental health is an area of concern (Danowitz & Beddoes, 2022; Jensen et al, 2021).

❖ Mental health challenges of engineering students are more pronounced than their non-engineering peers (Danowitz & Beddoes, 2018).

❖ Undergraduate engineering programs are characterized by a culture of stress (Jensen & Cross, 2020) and heavy workload (Godfrey & Parker, 2010). Within engineering programs, stress is being trivialized and normalized (Beddoes & Danowitz, 2022).

STUDY CONTEXT

❖ 21 undergraduate engineering students with at least one minoritized identity

❖ Participants come from various engineering disciplines

❖ Research site is a land-grant research-intensive university in the U.S.

PURPOSE and RESEARCH QUESTIONS

❖ The **purpose** of this qualitative study is to explore the ways in which faculty and peer relationship influences the mental health of undergraduate engineering students.

❖ **RQ1:** In what ways do professor interaction impacts undergraduate engineering students' mental health

❖ **RQ2:** In what ways do peer interaction impacts undergraduate engineering students' mental health

FINDINGS 1: PROFESSOR RELATIONSHIP

Empathetic Encounters
❖ Empathy
❖ Accommodation
❖ Taking Responsibility

> So like, I was really struggling with my mental health last year, and I went to one of my professors and like when do you think you'd get this done? I was like, listen, like, really sorry, I didn't do this assignment that's due today. I was just not doing great, I was focusing on myself and fortunately, that **professor was really understanding.**
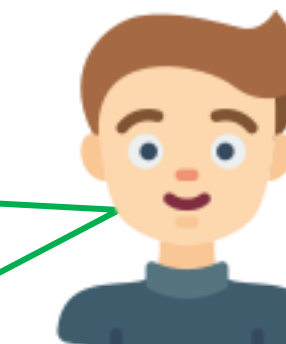
Apathetic Encounters
❖ No Interest
❖ Inflexibility
❖ Lack of Empathy

> Mental health is **definitely not something** that I think, at least from our faculty and professors **is taken seriously**, or like even thought about sometimes, like the only really mention of students who are struggling is the first days of like the syllabus lecture where it's like, if you are having difficulties with mental health, go to CAPS and then it's like, not mentioned again..

Covert Misogyny
❖ Differential Treatment
❖ Bias
❖ Condescending

> I had a one specific incident with a professor … he likes to call people out in class for questions and I noticed, every time he asked a woman and she responded, he would go, are you sure about that? But then **wouldn't do it to our any of our, like, male counterparts and** I hated going to that class. Well, it was very stressful and like I said earlier, like isolating and embarrassing
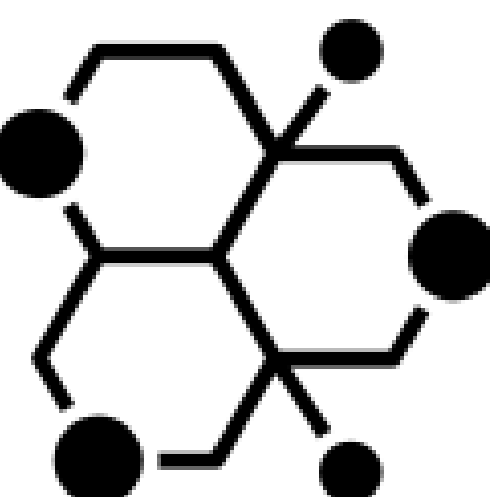
FINDINGS 2: PEER RELATIONSHIP
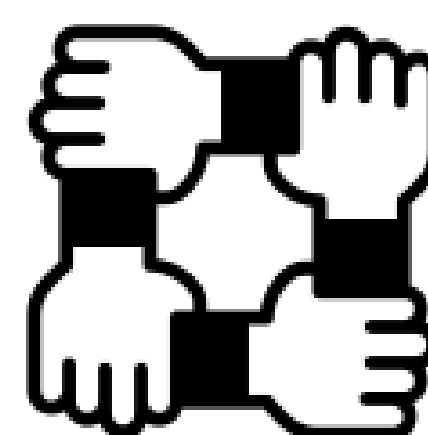
**Support and Allyship**
❖ Collaboration and Reciprocity
❖ Tutoring

> Just being able to find the support and kind of like the allyship with my peers has been very beneficial to my mental health

Trauma Bonding
❖ Shared Struggles
❖ Bonding

> I feel like the bonding that you have between other students, so the like, especially calculus, calculus is so hard and so **when you're struggling with somebody, you get like trauma bonded.** And so, I met some of my best friends through calculus and I really enjoy that, they understand what I'm going through. So, when I'm like really stressed, they just know that it's probably maybe a math class or it's like really hard
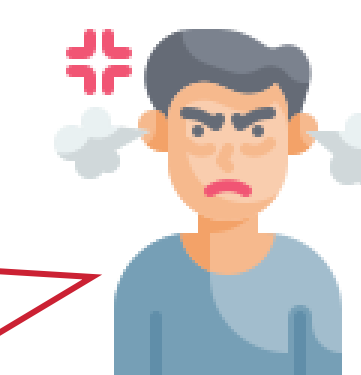
Peer Mentoring
❖ Structured mentoring
❖ Unstructured mentoring

> I serve as a **learning community mentor** for one of the learning communities on campus, which has shown me some pretty cool opportunities, and then also like, I've been able to **help freshmen that are crossing similar bridges** to what I was crossing, like struggling in their classes not knowing who to turn to for help. And like having seen like struggles and challenges, I'm like, really able to help them

METHODS

❖ This exploratory qualitative study draws on semi-structured hour-long interviews with 21 participants. A sample size of 21 participants is considered sufficient for a qualitative study of this nature.

❖ The study received IRB approval prior to data collection, as the research involves human subjects.

❖ Interviews were audio recorded and transcribed. Transcripts were reviewed by the research team to ensure accuracy.

❖ Data were analyzed using thematic analysis (Braun & Clarke, 2022), wherein the researchers search for themes across the data. The first round of coding was emergent coding, where the researchers developed codes that described the main idea of each excerpt of data. The second round of coding refined these codes into initial categories. The research team discussed these categories, and the third round of coding coalesced these categories into themes.

❖ This study is not intended to be generalizable, but rather is intended to be transferable.

Conclusion

❖ Empathetic encounters, support and allyship from peers, and peer mentorship **help** mental health of engineering students.

❖ Apathetic encounters and covert misogyny **hinder** mental health of engineering students. Trauma bonding is at the intersect between help and hinder.

❖ Professors especially should be mindful of their interactions with students and should be aware of how their actions can impact student mental health.

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