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Work in Progress: Measuring Stigma of Mental Health Conditions and Its Impact in Help-seeking Behaviors Among Engineering Students

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Abstract

In this work in progress we explore the relationship between stigma of mental health conditions (MHC) and help-seeking attitudes among engineering students. The prevalence of mental health conditions among college students has been increasing during the last few decades, and it will only be compounded by the challenges currently faced in our society. Nevertheless, it has been documented that college students have commonly experienced multiple obstacles in seeking help for their mental health conditions when they arise. Furthermore, it is known that engineering students are less likely to seek help than students in other fields when in similar circumstances. Stigma of mental health conditions is a persistent societal challenge that deters people from seeking help when needed. Based on the high-stress environment and demanding coursework that has been consciously or subconsciously promoted in the engineering field combined with the obstacles college students commonly face regarding mental health support, we hypothesize that there will be a relationship between stigma of mental health conditions and the likelihood that engineering students will seek help for those conditions. This work explores the relationship between stigma of mental illness and help-seeking attitudes of engineering students using responses from an online survey from 79 students at two institutions. Results show a negative correlation that suggest that higher general stigma levels are associated with lower help-seeking attitudes. In addition, the relationship between students' engineering department diversity orientation and help-seeking attitudes differed between those who had experiences with MHC and those who did not, suggesting that the perceptions of diversity orientation might also differ among the two groups. This is part of an ongoing research project aiming to characterize the dynamics of engineering culture and wellbeing through multiple quantitative and qualitative approaches. Insights from this research will support a better understanding of the prevalence of stigma in the field and a comparison against the general population as well as the assessment of resources available to students to address their mental health challenges.

Introduction

The prevalence of mental illness among U.S. adults has grown in the last decade. Young adults, 18-25 years old are the most affected group with more than 1 in 5 living with a mental health condition. It has also been estimated that 49.5% of adolescents aged 13 to 18 had a mental disorder [1], [2]. As this younger group reaches college, universities need to be prepared to provide adequate mental health support for their healthy development. The most recent report from the Center for Collegiate Mental Health (CCMH), which involves the data of more than 160,000 students seeking counseling services across 147 colleges and universities, shows institutions experienced an increase between 30% and 40% in the utilization of counseling centers while enrollment only grew 5% [3]. Anxiety and depression have been identified as the most common concerns among the college population but the rates of self-threat and suicide have steadily increased [3] with suicide being the current leading cause of death among this population, and mental health disorders and substance identified as risk factors [4]. It is important to notice that these rates are higher among female and gender nonconforming students [5], [6].

While these statistics offer a big picture of the landscape of mental health in higher education, engineering specific studies to gauge mental health related issues are scarce. One study addressing this void was recently presented by Danowitz and Beddoes [7], where the authors analyzed the incidence of mental health issues among engineering students at California Polytechnic State University. Their analysis of roughly 800 surveys indicated that engineering students were about two times more likely to suffer anxiety, depression, and PTSD symptoms than the average population of college students. While the authors did not explore the underlying reasons for their findings, their work opens a door for other researchers to begin investigating possible explanations for the higher rates of mental health conditions in engineering and understand factors that influence students' decisions to seek help. Wider scale studies and cross-institutional engineering-specific studies can provide additional evidence for understanding the mental health issues faced by our students and how engineering education plays a role in them and their ability to address such issues timely. Aligned with that objective, this study presents an initial exploration of the relationship between the stigma typically associated with mental health conditions and help-seeking behavior of students. It is a first step toward a more thorough examination of the engineering culture and its effect on students' mental health.

Engineering culture and mental health

There is limited formal study of engineering culture and its impact on student well-being. However, it is widely known that stress is a trigger for individuals living with a mental illness, often precipitating episodes of anxiety and depression [8]. In addition, it is recognized that stress tends to be the norm rather than the exception in the field of engineering. Living in constant stress and learning to live with it become a rite of passage for aspiring engineers measuring up to current standards in highly demanding majors. In this environment, a lack of sleep, and deprivation from social and leisure time become badges of honor that subconsciously measure belonginess. It has been argued that a stressful college culture is a contributing factor in deterring students living with mental illness from seeking the help they need [9].

A first attempt to understand how stress plays a role in the engineering culture was recently conducted by Jensen and Cross [10]. Grounding their study in social identity theory, their survey of 1,203 students captured perceived levels of engineering identity, perception of departmental inclusion, as well as stress and anxiety through a variety of validated instruments. The authors' findings identified that the higher the engineering identity, the higher the students' perceived departmental inclusion, and the lower their depression levels. High levels of stress were inversely related to the perceived levels of department inclusion. Furthermore, anxiety was positively correlated with stress and negatively correlated with elements of department inclusion. Low perceived inclusion or lack of belonging, has been an identified issue for engineering students, particularly affecting their retention and success [11]–[13].

Recent critiques to the engineering and engineering education research culture have highlighted the need to question: "for whom are we making engineering hard?" (p. 259); arguing that the rhetoric of meritocracy within a mentally and physically taxing engineering culture in which only the "fittest" succeed results in the exclusion of talent based on characteristics such as race, class, and disability [14]. Some elements of the engineering culture are now being explored under the concept of hidden curriculum, which are unwritten, unofficial values and perspectives made about the physical spaces and academic environment. While these are often unintended, they represent a venue to perpetuate certain elements of the engineering psyche, and their identification might be a valuable starting point for changing those elements of the hidden curriculum that have a negative impact.

Research performed about hidden curriculum argues that engineering education has been a space where emotions are not recognized as integral elements of the learning process. This disconnect between the expected rational space of engineering and the emotions space tends to push wellbeing to the sidelines [15] not only among undergraduates but also among faculty members [16]. While the impact of emotions in engineering education has attracted attention during recent years [17], [18], there is more to be understood about the complex dynamics of emotions and wellbeing within engineering. Broadening understanding of the dynamics of emotion with learning and teaching in engineering will remove elements that limit and advance the development of all members of the engineering education community, especially those with mental illness.

Stigma of mental health conditions

Stigma of mental health conditions is still prevalent in our society. Multiple studies have found evidence relating the attitudes toward stigma to the inability to seek help for mental health conditions in the general population [19]–[22]. Stigma-derived avoidance attitudes vary by age [23], ethnic background [24]–[26], and profession [27]. It has been found that college students have a higher prevalence of help-seeking avoidance when it comes to address their mental health challenges [28], [29]. With the increasing occurrence of mental health conditions among the college-aged population [1], [2], [30] it is important to identify elements that keep perpetuating stigma surrounding mental illness and that have, potentially, been negatively affecting student help-seeking attitudes.

The success of strategies to reduce stigma have been studied at the college level. A recent study conducted at a Midwestern liberal arts institution found that an institutionally supported community-based intervention was effective in reducing prejudice and discriminatory predisposition among a complete cohort of students exposed to it [31]. Nevertheless, the intersection of stigma and specific academic cultures such as engineering have not been explored before. Therefore, this paper aims to start understanding the intersection of stigma of mental health conditions and help-seeking attitudes of students in engineering. The research questions we explore in this work in progress are:

RQ1: What is the relationship between stigma of mental health conditions and help-seeking attitudes of engineering students?

RQ2: Which elements of the engineering culture relate to help-seeking attitudes among engineering students?

Theoretical Framework

The complexity of the impact of stigma calls for the use of a combination of theoretical lenses for its study. The considered theories for this project and its overarching structure for impact is pictured in Figure 1. If we analyze engineering as a disciplinary culture, it would be expected that the engineering culture permeates all levels of the academic system, including administration, faculty and students. While this first approach focuses exclusively on students, we expect that results from this line of inquiry will shed light on elements of the engineering culture across administration and faculty that are relevant to student wellbeing through additional qualitative approaches.

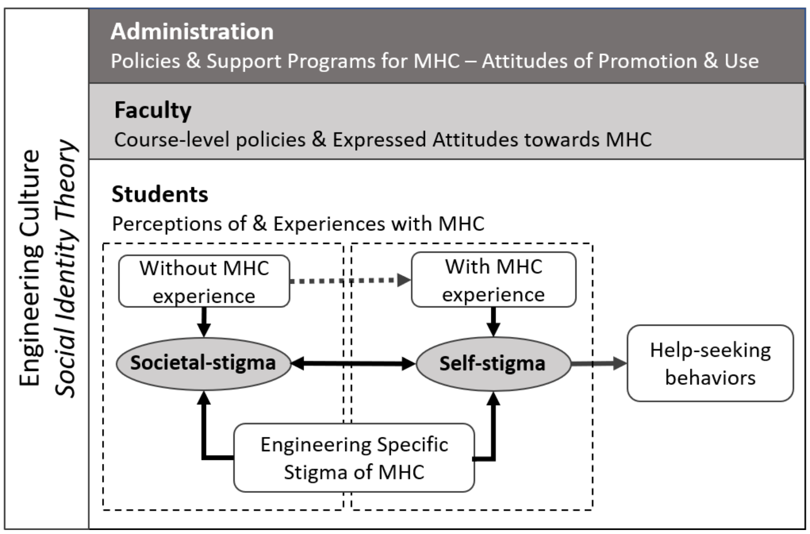

Figure 1. System of analysis and theoretical framing considered

Social-identity theory [32] provides a general framework for understanding more of the engineering culture under analysis and its interaction with stigma towards MHC. Social-identity theory states that, as individuals, we strive to maintain positive identities through the processes of *social categorization*, *social identification*, and *social comparison*. These processes result in a division of in-groups and out-groups which helps enhance self-image. Social identities can be positive or negative; the latter reflect elements that do not comply with societal expectations. Because of the multiple spaces where we develop, the multiple social identities we hold vary in their nature and strength [33]. In this sense an engineering identity can be analyzed under the light of a positive identity due to its prestige in US society [34] and an identity of experiencing an MHC, a negative identity due to the societal stigma still present around MHC [29]. From these characteristics, we derive two assumptions for our study: (1) the engineering identity will take precedence over the identity related to the MHC status, as such we define engineering identity as the first-tier identity while MHC status the second-tier identity; and that (2) there will be some conflict from the interaction of these two considered identities.

Methods

Data Collection

An online survey was deployed through Qualtrics during the Spring 2021 semester to convenient samples of students at two institutions, one Midwestern Predominantly White Institution which distributed the survey among a sample of first-year engineering students, and a Hispanic Serving Institution which distributed the survey among students across all academic years within a specific engineering major. The data collection procedures and tools here described were approved by the corresponding Institutional Review Boards at the end of the Fall 2020 semester.

There were five scales included in the survey. All of them were previously validated through large scale Confirmatory Factor Analyses in previous studies, which we cite in their corresponding description.

The ***College Toolbox Project*** (CTP) [31] was used to measure stigma constructs, in particular it measures *general prejudice* (12 items), and *college-specific prejudice* (12 items) in a four-points Likert scale (Strongly disagree (1) to Strongly agree (4)). We adopted to the college-specific prejudice to a new *engineering-specific prejudice* subscale (12 items) in the same Likert scale to account for engineering-relevant scenarios where such prejudice might play a role, e.g. "It would make me feel nervous to work in an engineering team with a student with a mental illness." The four sub-scale for this instrument was *college-specific social distance*, with 11 items measured in a four-points Likert scale (Definitely willing (1) to Definitely unwilling (4)). College-specific social distance was also adapted to be focused on engineering interactions when possible, as well as including the considerations of face-to-face and online settings for students' collaboration.

To measure self-stigma of those students that have first-hand experience with MHC, we first found students with such experiences by asking students different questions. Since it was expected that some students might not feel inclined by being asked directly if they had a MHC, we asked students if they either (1) have been diagnosed with an MHC, or (2) have ever been treated badly or unfairly because of a physical, mental or social characteristic, those that answered yes to the latter question were offered the option to select among different sources for such experiences, only those that selected MHC were considered among those that have experiences with MHC. We offered the ***stigma scale*** [9] to only such subset of students. This validated scale has 28 items measuring three main factors: *perceived discrimination from others* (13 items), issues of *disclosure* of their condition (10 items), and *positive aspects of having a mental illness* e.g. becoming more understanding or accepting person (5 items), all elements were explored in a 5-point Likert scale (Strongly Disagree (0) to Strongly agree (4)). These elements map to the social-stigma and self-stigma elements we are interested to explore.

Help-seeking attitudes were measured using the attitudes towards seeking professional psychological help. This reduced instrument was proposed by [35], and uses 10-items to explore willingness to seek professional help when needed, it uses a four-point Likert scale (Disagree (0) to Agree (3)). Recent explorations of this scale have found that the instrument holds a three dimensional structure [36] capable of capturing different aspects of help-seeking attitudes. However, we first used it as an unidimensional tool as originally intended by [35].

Engineering Culture was measured through the Engineering Department Inclusion Level (EDIL) survey [37] which includes elements of *Department Care* (15 items), *Department Diversity* (7 items) and *Department Pride* (4 items), using a 7-point Likert scale (Strongly disagree (0) to Strongly agree (6)). While this tool originally included elements at the University level, we only used the department level subscales, which all had an internal consistency of at least α=0.92 [37], this approach was also used to exploring issues related to the culture of stress in engineering by [10]. We added a question about "People with mental illness are treated fairly in this department" in order to assess such aspect of diversity in this established scale.

Engineering identity and belonginess were also measured through four questions (2 questions each) used by [38] respectively, in a 7-point Likert scale (Strongly disagree (0) to Strongly agree (6)). We also included general demographics as well as elements exploring students' knowledge of MHC.

Data Cleaning and Instrument Validation

Raw data was recoded numerically, and opposite wording questions were inverted where necessary to consistently reflect higher scores to higher levels of each characteristics e.g. higher score higher stigma. Missing data was verified within each subscale, and it was confirmed to be less than 5% and to follow a Missing Completely at Random (MCAR) structure. Therefore, missing data imputation was performed for each subscale using Predictive Mean Matching (PMM) which is appropriate for this missing structure, and a more robust method than fully parametric multiple imputation methods [39]. All data cleaning, data imputation, and data analysis procedures were conducted using R [40].

Due to the limited sample size of this exploratory study, it was not feasible to perform a confirmatory factor analysis for the structure of the involved instruments in this particular group of students. In addition, an exploratory factor analysis to confirm one-dimensionality of each subscale was not performed given the heterogeneity of the populations included in our sample. Nevertheless, we verified the internal consistency of each subscale through Cronbach's alpha calculations. In the particular case of the CTP, some items were eliminated from the original list, to reflect the item reduction presented in [31], which reduced the number of items in the General prejudice, and college-specific prejudice to 8 and 9 items respectively. For the college-specific social-distance scale, we considered both the online and in-person version of the class related items, for a total of 16 items. Besides the addition to the EDIL survey, no other instruments were altered in any way. The general characteristics of each subscale and their corresponding Cronbach's alpha are presented in Table 1 . The only subscale showing less than satisfactory α levels, using a threshold of 0.7 [41] was the positive aspects of self-stigma subscale, therefore such scale is excluded from further analysis.

Table 1. General Descriptives per Scale/subscale and their internal reliability

Instrument	Subscale	Items	Mean (SD)	α
CTP	Total	42	70.1 (15.6)	
	General Prejudice	8	15 (3.4)	0.74
	College-specific prejudice	9	15.2 (3.3)	0.75
	Engineering-specific prejudice	9	15.2 (3.3)	0.75
	Social-distance (In-person and Online)	16	24.2 (8.4)	0.95
Self-stigma	Total	28	44.1 (18.7)	
	Discrimination	12	16.8 (10.5)	0.88
	Disclosure	11	22.4 (9.4)	0.83
	Positive aspects	5	4.9 (2.7)	0.46
Help-seeking Attitudes	Total	10	19.6 (5.44)	0.75
Engineering Culture	Total	26	117.1 (22)	
	Department Care	15	64.2 (14.4)	0.95
	Department Diversity	7	33.3 (6.6)	0.94
	Department Pride	4	19.6 (3.73)	0.88
Engineering Belonginess & Identity	Total	4	18.6 (4.18)	0.9

Data Analysis

The first analysis of the collected data was performed through correlation analyses between the total scores for each construct measured. The distribution of the sample according to the main demographic characteristics is presented in Table 2. It is noticeable that the data has a higher representation of females than the regular proportion in engineering, as well as a higher proportion of Hispanic/Latinx students. Furthermore, the proportion of sexual and gender minorities is sizeable, and large multi-institutional studies have documented that these groups experience MHC at a higher rate [6]. Additionally, more than half of our sample come from a single engineering major. It is clear that the characteristics of this sample will pose a limitation to the generability of our results, still serves the purpose of this exploratory work in progress.

Table 2. Demographic characteristics of survey respondents (n=79).

	Engineering		**With MHC experience**		**Without MHC experiences**	
	n	%	n	%	n	%
Sex assigned at birth						
Male	30	37.97	7	36.84	23	38.33
Female	48	60.76	12	63.16	36	60
NA	1	1.27	0	0	1	1.67
Sexual orientation						
Heterosexual	56	70.89	11	57.89	45	75
Bisexual	15	18.99	5	26.32	10	16.67
Gay/Lesbian	5	6.33	2	10.53	3	5
Uncertain or other	2	2.53	1	5.26	1	1.67
NA	1	1.27	0	0	2	3.33
Hispanic/Latinx						
Yes	50	63.29	12	63.16	38	63.33
No	28	35.44	7	36.84	21	35
NA	1	1.27	0	0	1	1.67
Ethnicity						

African American/Black	2	2.53	0	0	2	3.33
Asian American/Asian	3	3.8	0	0	2	3.33
Mixed races	23	29.11	6	31.58	17	28.33
White	44	55.7	11	57.89	33	55
NA	7	8.86	2	10.53	5	8.33
First Generation						
Yes	7	8.86	4	21.05	3	5
No	71	89.87	15	78.95	56	93.33
NA	2	2.53	0	0	1	1.67
International						
International Student	4	5.06	1	5.26	3	5
Non-International Student	72	91.14	17	89.47	55	91.67
NA	3	3.8	1	5.26	2	3.33
Engineering Major						
Industrial Engineering	47	59.49	11	57.89	36	60
Other	30	37.97	8	42.11	22	36.67
NA	2	2.53	0	0	2	3.33
Academic Year						
First-Year	40	50.63	11	57.89	29	48.33
Sophomore	4	5.06	0	0	4	6.67
Junior	8	10.13	0	0	8	13.33
Senior or more	26	32.91	8	42.11	18	30
NA	1	1.27	0	0	1	1.67
Total	79	100	19	24.05	60	75.95

Preliminary results

The correlation analysis between the stigma subscales measured by the College Toolbox, summarized in Table 3, showed a negative correlation between the general prejudice scale and help-seeking attitudes. The engineering specific prejudice sub-scale showed perfect correlation to the college-specific prejudice, which might be an indicator of no differentiation between the scales when engineering elements were considered. Therefore, potentially a good indicator that the engineering context do not add additional layers to student prejudice towards MHC.

Table 3. Correlation results for stigma subscales and help-seeking

Scales	*0*	*1*	*2*	*3*	*4*	*5*
0. Total Stigma	1					
1. General Prejudice	0.78**	1				
2. College-Specific Prejudice	0.86**	0.70**	1			
3. Engineering-Specific Prejudice	0.86**	0.70**	1.00	1		
4. Social distance	0.87**	0.51**	0.52**	0.52**	1	
5. Help-seeking Attitudes	-0.18	-0.29*	-0.14	-0.14	-0.10	1

***p-value<0.01,* *p-value<0.05, +p-value<0.10

The correlation analysis between self-stigma and help-seeking attitudes was performed only among the subsample of students that reported having a MHC (n=19). Such results are presented in Table 4 and show that while the correlation between help-seeking attitudes and the discrimination and disclosure subscales were negative, as were hypothesized by our theoretical considerations, they were not statistically significant from zero.

Table 4. Correlation results for Self-stigma among students that reported having a diagnosed MHC.

Scales	*0*	*1*	*2*	*3*	*4*
0. Total Self-stigma	1				
1. Discrimination	0.92**	1			
2. Disclosure	0.90**	0.67**	1		
3. Positive Aspects	0.30	0.15	0.14	1	
4. Help-seeking Attitudes	-0.19	-0.08	-0.20	-0.33	1

p-value<0.01,p-value<0.05, +p-value<0.10

When exploring the relationships between perceptions of inclusion at the department level with help-seeking and the remaining variables of engineering belonging and engineering identity there were no significant correlations between department inclusion scales and help-seeking attitudes (see Table 5). Nevertheless, there was a positive correlation between engineering belonging and help-seeking. Finally, engineering identity was positively correlated to all diversity measurements and slightly to engineering belonging but not to help-seeking. Therefore, it seems like there is an indication of a protective effect of department inclusion into engineering identity.

Table 5. Correlation results between Department diversity constructs, help-seeking, engineering belonging and identity.

	All students						
Scales	*0*	*1*	*2*	*3*	*4*	*5*	*6*
0. Department Total	1						
1. Department Caring	0.96**	1					
2. Department Diversity	0.81**	0.65**	1				
3. Department Pride	0.75**	0.65**	0.50**	1			
4. Help-seeking Attitudes	0.09	0.13	-0.02	0.05	1		
5. Engineering Identity	0.48**	0.45**	0.29**	0.59**	0.06	1	
6. Engineering Belonging	0.21+	0.17	0.24	0.19+	0.23*	0.21+	1

***p-value<0.01, *p-value<0.05, +p-value<0.10*

Under the proposed theoretical framework, it could be expected that the experiences of those that have or have had a MHC would be different than those that have not. Therefore, we conducted additional correlation analyses for each group separately. Table 6 and 7 show the separate correlational analyses for the considered variables for both groups of students. Engineering identity is still positively correlated to two diversity indicators and engineering belonging. However, help-seeking is now negatively correlated to department diversity. On the other hand, Table 7 shows that for students that have not experienced MHC there was a positive correlation between department caring and help-seeking attitudes. A comparison on the level of perceptions of department diversity and help-seeking attitudes between students with MHC and those with no MHC was performed and no significant differences were found. Which might indicate a more complex interaction taking place between such elements across the considered groups that we should explore in future work.

Table 6. Correlation results among students with MHC experiences

	Students with MHC experience (n=19)						
Scales	*0*	*1*	*2*	*3*	*4*	*5*	*6*
0. Department Total	*1*						
1. Department Caring	0.97**	1					
2. Department Diversity	0.83**	0.70**	1				
3. Department Pride	0.79**	0.67**	0.70**	1			
4. Help-seeking Attitudes	-0.34	-0.27	-0.50*	-0.27	1		
5. Engineering Belonging	0.53*	0.46*	0.36	0.80**	0.15	1	
6. Engineering Identity	0.41+	0.33	0.41+	0.52*	0.07	0.62**	1

***p-value<0.01, *p-value<0.05, +p-value<0.10*

Table 7. Correlation analyses among students that have not experienced MHC.

	Students without MHC experience (n=60)						
Scales	*0*	*1*	*2*	*3*	*4*	*5*	*6*
0. Department Total	1						
1. Department Caring	0.96**	1					
2. Department Diversity	0.82**	0.66**	1				
3. Department Pride	0.74**	0.66**	0.45**	1			
4. Help-seeking Attitudes	0.27*	0.32*	0.13	0.18	1		
5. Engineering Identity	0.46**	0.44**	0.28*	0.52**	0.03	1	
6. Engineering Belonging	0.18	0.16	0.19	0.11	0.31*	0.15	1

***p-value<0.01, *p-value<0.05, +p-value<0.10*

Discussion and Future work

RQ1: What is the relationship between stigma of mental health conditions and help-seeking attitudes of engineering students?

We found a relationship between stigma of MHC and help-seeking attitudes among the sample of engineering students. This relationship was only strong enough between the general prejudice subscale of stigma which was negatively correlated with help-seeking attitudes. This was an expected result based on the extensive literature that links stigma and help-seeking attitudes [28], [29]. However, there was not substantial evidence differentiating engineering-specific prejudice from college-specific prejudice and their relationship with help-seeking attitudes. This could indicate a lack of engineering-specific factors that affect the experience of those with MHC.

Therefore, future iterations of the survey instrument should include more thorough descriptions of elements of the engineering education and practice along with qualitative data collection and analysis.

RQ2: Which elements of the engineering culture relate to help-seeking attitudes among engineering students?

We found that elements of engineering departments orientation towards diversity, care, and perceived pride do correlate positively to students help-seeking attitudes but not significantly. When splitting our analysis by those students that have experienced MHC and those that have not, we found that such correlations differed by group. We found a positive correlation between department care and help-seeking attitudes, i.e. the higher perceptions of department care the higher the help-seeking attitudes, but only among students without MHC experiences. Among those with MHC experience, there was a negative correlation between Department care and help-seeking attitudes. This might indicate that students with MHC could have a different conceptualization of departmental diversity efforts given their condition. The fact that we included an item to the EDIL instrument to ask specifically about their perceptions about the treatment of those with mental illness needs to be more extensively analyzed, as students might recognize positive department attitudes towards other aspects of diversity but not towards MHC.

In the context of existing knowledge, we are also strengthening existing evidence about the relationship between engineering identity and department-level orientation towards diversity. As previously found by Jensen and Cross [10], engineering identity has a positive relationship with department caring, orientation towards diversity, and sense of pride. In addition, our results show some evidence aligned with the theorized relationship between mental health status and engineering identity as well as the hypothesized relationship of stigma and help-seeking attitudes. The differential effect on help-seeking attitudes among those with MHC and those without MHC further illustrate the need to understand both groups more thoroughly.

There are multiple limitations of the presented analysis that should be addressed, in particular the limitations of a small sample size, and the distribution of respondents which had various minority groups oversampled. Similarly, the sensitivity of the topic could have contributed to self-selection bias, in which students with MHC were more likely to respond to the survey. Our future data collection efforts will attempt to mitigate these sampling issues. In addition, we did not account for current struggles with MHC, such as students' levels of depression, anxiety, or stress, which could triangulate information provided about MHC, as well as allowing comparisons of baseline levels among those with and without existing diagnosis or experiences with MHC.

Future work includes a more granular analysis of simultaneous effects across different groups within the allowances of the existing data. These results will help reshape upcoming data collection efforts at a larger scale that will include longitudinal and qualitative approaches to generate a more thorough understanding of the complex problem we are trying to understand.

Long term results of this inquiry are expected to contribute to a more thorough understanding of the lived experiences of students with MHC and interventions that can help reduce stigma of MHC across engineering students in general.

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