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Creation of an intervention-focused mental health help-seeking beliefs instrument for engineering students

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Introduction

This is a Full Paper reporting on Empirical Research. Engineering students report high rates of mental health conditions such as depression and anxiety [1, 2]. However, while national data indicate that engineering students are not experiencing significant differences in mental health distress between undergraduate engineering students and their non-engineering peers [3], those students who report symptoms of diagnosable mental health disorders are unlikely to seek professional help [4]. This is concerning because untreated mental health problems can become more severe over time [5, 6] and can negatively affect student academic outcomes [7-9]. In order to improve help-seeking behavior in engineering students, it is necessary to identify the factors that influence that behavior. Efforts to accomplish this have culminated in the development of the UE-MH-HSI [10]. Further work has been done to expand it, resulting in a research instrument that is comprehensive and more generalizable to a diverse population of engineering students. However, this expanded instrument contains a large number of items that reduce its feasibility for widespread implementation. This paper outlines the process of adapting the instrument into a shorter, intervention-focused version, and presents findings from data collected with it. Next, we describe the theoretical underpinnings of the instrument and review the expansion of the instrument before describing how we went about refining the expanded instrument.

Integrated Behavioral Model

The Integrated Behavioral Model (IBM) is an empirically supported theoretical framework from the reasoned action tradition [11]. Recently, this model has been adapted to the context of mental health related help-seeking, creating the integrated behavioral model of mental health help seeking (IBM-HS) [12]. In this model, help-seeking behavior is primarily driven by help-seeking intention, which is a person's self-reported readiness to exert effort to seek help from a mental health professional [13]. Intention is itself informed by three mechanisms: attitude, perceived norm, and personal agency [12]. Attitude is an individual's overall evaluation of seeking help, whether positive or negative. Perceived norm is an individual's idea about the social approval of seeking help. It is composed of two elements: 1) injunctive, the perception of what others would expect them to do, and 2) descriptive, the perception of what others would do for themselves in the same position. Finally, personal agency is an individual's evaluation of their ability to seek help and is composed of the elements of autonomy and capacity. Autonomy is a person's self-perceived personal control over seeking help, and capacity is their self-perceived confidence in their ability to do so.

These direct mechanisms are further influenced by beliefs [11]. Attitude is guided by outcome beliefs, which are the anticipated results of seeking help and experiential beliefs, the emotions associated with the idea of seeking help. The injunctive aspect of perceived norm is guided by beliefs about others' expectations, that is, whether an individual believes that the people important to them would expect the individual to seek help for their mental health if needed. The descriptive aspect is influenced by beliefs about others' behavior; whether an individual believes that the people important to them would seek help for themselves if needed. Finally, personal agency is guided by beliefs about barriers and facilitators (called logistical beliefs in the IBM-HS); the factors that help or hinder an individual's ability to seek help. These beliefs are

themselves shaped by underlying factors such as demographic characteristics, culture, socioeconomic status, environment, and personality [11]. The structure of the IBM-HS is illustrated in Figure 1.

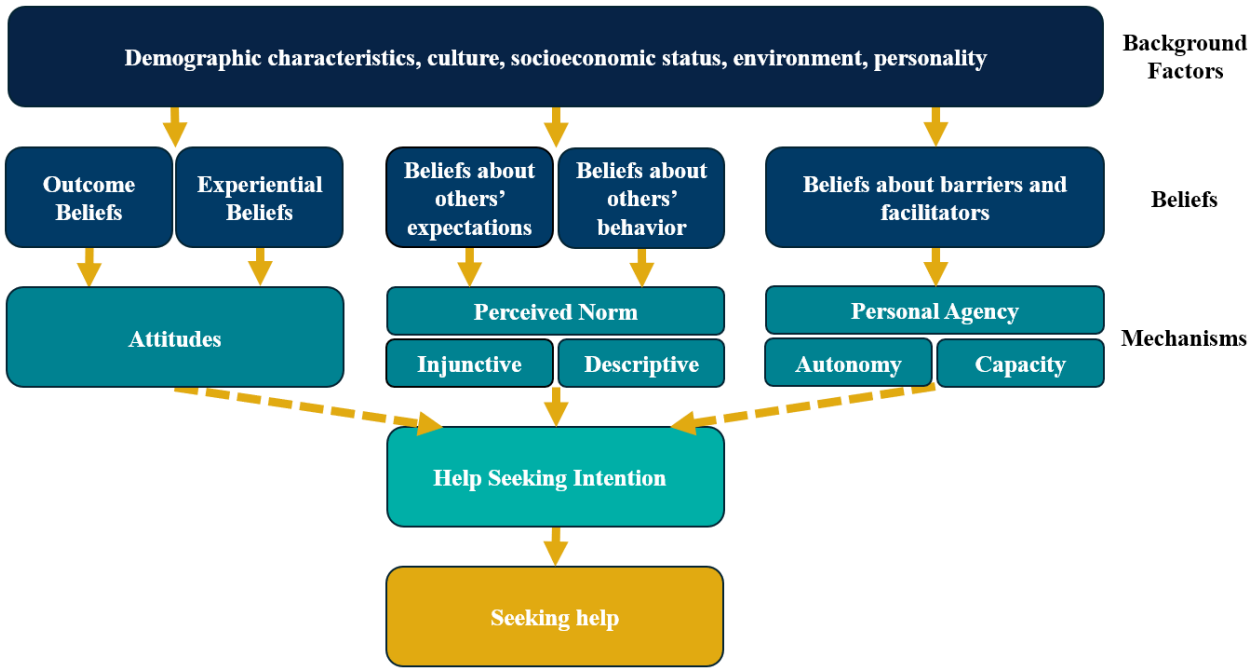

Figure 1: The Integrated Behavioral Model applied to help-seeking behavior

Undergraduate Engineering Mental Health Help Seeking Instrument

The IBM-HS provides an analytical framework for answering important research questions about how help-seeking beliefs and mechanisms shape intention. Guided by this model, the Undergraduate Engineering Mental Health Help Seeking Instrument (UE-MH-HSI) was developed for the purpose of identifying beliefs predictive of intention to seek professional help for a mental health concern [10]. The UE-MH-HSI uses various multi-item self-report scales from literature to measure mental health help-seeking mechanisms and intention [10, 14, 15]. Initial identification of the belief items in the UE-MH-HSI was based on data collected from undergraduate engineering students at a large public southeastern Predominantly White Institution (PWI). Semi-structured interviews were conducted to identify engineering students' beliefs about seeking help for their mental health [10]. Since the initial publication of the UE-MH-HSI, the instrument has been expanded to improve its cross-cultural applicability based on information collected from focus groups conducted with undergraduate engineering students from a large public southern Hispanic-serving institution (HSI) and a public southern Historically Black University (HBCU). During these focus groups, participants were provided with the existing list of belief items and asked to brainstorm and identify applicable beliefs that were not captured by that list. The final expanded instrument consisted of 38 outcome beliefs (OB), 14 experiential beliefs (EB), 14 beliefs about others' expectations (BOE), 14 beliefs about others' behaviors (BOB), and 24 beliefs about barriers and facilitators (BBF).

While the development of this instrument was robust, resulting in a comprehensive research instrument that can be used to study the factors that influence help seeking, the expanded

instrument may be too cumbersome for practical implementation. The long survey length can lead to lower participant recruitment and retention, higher incentive costs, and lower data quality [16, 17]. As such, this paper highlights our effort to create a shortened intervention-focused version of the instrument through removal of items that were (1) statistically overlapping or (2) focused on beliefs that would be impractical for university stakeholders (e.g., administrators, faculty, staff) to change through on-campus intervention and thus limited in their ultimate practical utility for guiding future intervention efforts. The result is a shorter tool that is more feasible for university stakeholders to use in identifying mental health intervention targets and evaluate their impact on student help seeking beliefs.

Methods

Participant Recruitment

Data was collected using the expanded version of the UE-MH-HSI in September 2023. Following IRB approval, participants were recruited to complete a largescale survey from the three institutions involved in the expansion (via focus group feedback) of the instrument.

The recruitment message was distributed to students either directly from Qualtrics based on an enrollment list provided to the study team, or through a blast email through the college's Listserv system. Additional recruitment efforts involved hanging posters around areas frequented by engineering students, and identifying courses evenly distributed across major and year of study and asking the course instructors to share the study information with the students in their identified classes. Participants were incentivized to take the survey with a $5 e-gift card and entry into a raffle for the potential to win an additional e-gift card of a larger value.

Before beginning the survey, students were presented a copy of the informed consent cover letter. Students who consented to participate could skip questions at any time without it affecting their compensation. At the end of the survey, students were provided with a link to a separate form to fill out their contact information to receive their compensation.

Sample

In addition to the full sample and each participating institution, seven demographic subgroups were included in the analysis for the instrument reduction. These subgroups were selected based on available sample size. The composition of the participating sample, overall and for each institution, is provided in Table 1.

Table 1: Sample demographics for each participating institution and the overall sample

	HBCU		HSI		PWI		Total
Man	25	45.5%	133	57.3%	281	55.1%	439
Woman	27	49.1%	92	39.7%	210	41.2%	329
First Generation	22	40.0%	105	45.3%	109	22.0%	236
Asian or Asian American	1	1.8%	79	34.1%	45	8.8%	125
Black or African American	40	72.7%	20	8.6%	19	3.7%	79
Latinx or Hispanic	8	14.6%	63	27.2%	14	2.8%	85
White	0	0.0%	30	12.9%	375	73.5%	405
	77		232		582		891

Measures

At the beginning of the survey, participants were provided with definitions of mental health professionals and mental health concerns, as well as the hypothetical mental health distress

scenario to keep in mind while answering the questions. The full UE-MH-HSI instrument was included in the survey. Intention (measured using the mean score of the items in the Mental Health Help-Seeking Intention Scale [14]) and the belief items in each category (outcome beliefs (OB), experiential beliefs (EB), beliefs about others' expectations (BOE), beliefs about others' behaviors (BOB), barriers and facilitators (BBF)) were analyzed for the purposes of instrument reduction. For each category of belief items, participants were presented with a stem question such as, for outcome beliefs, "In this hypothetical scenario, my seeking help from a mental health professional the next three months would…" and asked to indicate how much they agreed with each statement using a 6-point Likert-scale response.

Planned Missingness

To reduce the active length of the instrument, participants were provided with a version of the instrument subject to a planned missingness strategy wherein each respondent randomly saw only 66% of the items in each direct measure category, and approximately half of the belief items. The belief items were split into two groups that were equally distributed in a random assignment to each respondent. Group one saw the outcome and experiential belief items, while group two saw the items associated with beliefs about others' expectations and behaviors and beliefs about barriers and facilitators.

Instrument Reduction

The first step in reducing the length of the instrument was to qualitatively identify items as viable intervention targets – defined as those beliefs that university stakeholders (e.g., administrators, faculty, staff) could feasibly target through interventions (e.g., workshops, policy changes, resource allocation) – and flag them for retention. Additional items with the potential to provide interesting information about the respondent sample were also identified for retention. Items that did not fall into either of these categories were cut. The retained items were then analyzed for statistical overlap: bivariate correlations were run between items in each belief category for the overall sample as well as each subgroup of interest. Statistical overlap was defined based on a correlation coefficient greater than 0.6 for eight or more of the eleven subgroups that were analyzed. Items with a correlation coefficient greater than 0.6 for six or seven out of the eleven subgroups were classified as having partial overlap and were subject to further discussion.

To assist in the classification of partial overlap, exploratory factor analysis was used to group belief items within each belief category into smaller subcategories. To determine the number of factors to retain, the eigenvalues were analyzed under two separate criteria: by identifying factors with eigenvalues < 1, and by examining the scree plot (the plot of extracted factors against their eigenvalues in descending order of magnitude). From the first criteria, only those factors with eigenvalues greater than 1.00 were retained. For the second criteria, the scree plot was analyzed to identify distinct breaks in the slope of the plot [18]. When these two criteria resulted in a different number of extracted factors (e.g., seven factors retained based on the eigenvalue values, but only three based on the scree plot), the geomin rotated loadings were analyzed for each item. The final number of factors was selected based on the cleanest loading pattern (the fewest items loading on multiple factors based on a significant factor loading magnitude of 0.30) [18].

Data Analysis

To identify beliefs that influence undergraduate engineering students' intention to seek help for their mental health, bivariate correlations were conducted between the retained belief items in each category and the intention mean score.

Results

To reduce the length of the instrument, each variable was discussed with respect to 1) feasibility of targeting the belief by campus mental health intervention and 2) statistical overlap. First, each belief item was discussed as a research team and items that could not feasibly be targeted for intervention by university stakeholders were removed. For instance, university stakeholders are unlikely to develop mental health interventions that are targeted towards the romantic partners of students enrolled within engineering. Therefore, the items related to beliefs about expectations/behaviors of romantic partner(s) were removed. Next, to understand partial overlap of items, exploratory factor analysis was used to group items based on data structure, resulting in two to six factors for each of the belief categories of the IBM-HS. These factors were characterized based on the conceptual grouping of items within each factor. The results of exploratory factor analysis are presented in Table 2 below with an example of an item falling within each factor.

Table 2: Identified groups of beliefs in each category based on exploratory factor analysis

Belief Category	Factor	Example item
Outcome Beliefs	Efficacy of treatment	help me find a solution to my problem(s)
	Internal stigma/fears	make me feel like I'm an imposter in engineering
	External stigma/discrimination	result in me being discriminated against in my future career
Experiential Beliefs	Positive	hopeful
	Negative	scared
Beliefs about Others' Expectations/Behaviors	Professional/Authorities	my engineering professors
	Personal/Community	my friends
Beliefs about Barriers and Facilitators	Knowledge	to be familiar with the mental health resources available to me
	Mode of access/fit	to have the option to seek help from a mental health professional in person
	Support/access to information	to have support from someone who knew how to access professional help
	Motivation	to prioritize my academic success over my mental health
	Time	to have little free time due to my academic workload
	Other barriers	it would be a requirement to pay money to seek help from a mental health professional

Finally, statistical overlap was determined through bivariate correlation of variables within the same help-seeking belief category. This was repeated across the key demographic subgroups identified in Table I. Due to the size of correlation tables, results have not been included within the manuscript. These findings were used to discuss further reduction in the length of the instrument.

Instrument reduction

Outcome Beliefs

Many belief items were cut from the instrument due to a high degree of correlation with other items. For example, the outcome belief item "be a sign of weakness" was significantly correlated with the item "make me look overly emotional" in nine out of 11 subgroups, the item "hurt my pride" in nine out of 11 subgroups, and the item "be a sign that I'm not independent" in 10 out of 11 subgroups. As such, "be a sign of weakness" was kept while the other three highly correlated

items were cut. Additionally, the item “make me feel better” was cut because it was deemed to be too general and encompassed many of the items related to the positive impact of mental healthcare. Statistically, this belief was correlated with items such as “help me feel supported” in eight subgroups, “help me find a solution to my problem(s)” and “be a waste of time” for seven subgroups, and “help me improve my ability to deal with stress” for six subgroups. Additionally, all of these items factored together under the “efficacy of treatment” subcategory. Finally, the item “help me improve my ability to deal with stress” was cut due to its high correlation (nine out of 11 groups) with the item “help me find a solution to my problem(s).” In total, twelve items were cut from the outcome beliefs.

Experiential Beliefs

Among the positive beliefs, “hopeful" was correlated with “happy” for seven subgroups and “relieved” for six. “Happy” was further correlated with “confident” and “relieved” for eight subgroups each. With the negative beliefs, “incompetent” was correlated with “helpless,” “ashamed,” and “defeated,” each in eight out of the 11 subgroups, while “defeated” and “ashamed” were also correlated with each other in eight subgroups. While statistical overlap was the starting point of discussion, the majority of experiential belief items were ultimately cut based on the stated goal of this project: to produce a shorter, intervention-driven version of the instrument. As experiential beliefs are based in emotional responses to the idea of seeking help, they are more vague and less actionable as key intervention targets relevant to engineering college stakeholders. Additionally, because they, like the outcome beliefs, are related to the attitude direct measure, many of the emotions were conceptually overlapping with various outcome belief items. For these reasons, “hopeful,” “scared,” “overwhelmed,” and “selfish” were the only four items retained.

Beliefs about Others’ Expectations/Behaviors

The items associated with beliefs about others’ expectations and behaviors were based on referents, with the stem question, “I would expect that _____ [would think I [should / should not] (BOE)/would or would not (BOB)] seek help from a mental health professional in the next 3 months. As the two categories contain the same items, cuts were implemented across both categories. All engineering-related items were kept based on viability as intervention targets, and religious/spiritual, racial/ethnic, and hometown communities were kept because they account for potential sociodemographic factors of interest that influence help seeking. Additionally, the item “my other family members” was highly correlated with “my parent(s)/guardian(s)” for all groups in both BOE and BOB items. These were combined into a single “my family” item, which was kept based on interest. Other items were cut due to a combination of lack of intervention viability and correlation with other items (that also lacked viability as intervention targets). Eight out of the original 14 items in each category were retained from this process.

Beliefs about Barriers and Facilitators

For the barriers and facilitators category, few items were strongly correlated with each other and the 38 outcome beliefs grouped into six distinct factors. The item “to have the option to seek help from a mental health professional on campus” was correlated with “to have the option to see a mental health professional in person” for 6 groups, but both were ultimately retained. Therefore, the only item cut was “to have the option to see a mental health professional outside of campus” due to its lack of viability as a target for intervention by administrators on a university campus.

Key Beliefs Predicting Intention

Because we are interested in understanding the key beliefs that influence intention to seek help, bivariate correlations were conducted between the reduced set of belief items and intention. As presented in Table 3, 16 of the 26 outcome beliefs were statistically significantly correlated with intention. The top three outcome beliefs positively predicting intention for the sample of engineering undergraduate students were "improve my performance" ($r = 0.46$, $p = 0.000$), "help me feel supported" ($r = 0.42$, $p = 0.000$), and "help me find a solution to my problem(s) ($r = 0.39$, $p = 0.000$). Conversely, endorsement of the beliefs "be a waste of time" ($r = -0.46$, $p = 0.000$), "make me feel worse" ($r = -0.38$, $p = 0.000$), and "be a sign of weakness" ($r = -0.33$, $p = 0.000$) were associated with lower intention.

Table 3: Correlation of outcome beliefs with intention to seek help; "In this hypothetical scenario, my seeking help from a mental health professional in the next 3 months would _____."

	r	p
improve my academic performance	**0.46**	**0.000**
help me feel supported	**0.42**	**0.000**
help me find a solution to my problem(s)	**0.39**	**0.000**
result in a mental health diagnosis	**0.38**	**0.000**
improve my relationships	**0.38**	**0.000**
result in me being given medication	**0.35**	**0.000**
involve working with a mental health professional who tailored the treatment to my specific needs	**0.33**	**0.000**
require me to go through an unfamiliar process	**0.16**	**0.002**
reinforce negative stereotypes about people from my cultural background	-0.01	0.819
result in me being discriminated against by the mental health professional	-0.02	0.725
involve working with a mental health professional who doesn't understand people from my cultural background	-0.02	0.730
go against the expectations that others have about people of my gender identity	-0.05	0.413
make me feel like I'm an imposter in engineering	-0.05	0.331
result in me being discriminated against in my future career	-0.05	0.326
involve working with a mental health professional who doesn't understand my mental health challenges	-0.07	0.189
be a sign that I'm not perfect	-0.07	0.194
be emotionally difficult	-0.09	0.113
go against the expectations of the engineering community	-0.10	0.056
result in me being negatively judged by others	**-0.14**	**0.005**
disappoint my family	**-0.15**	**0.005**
mean that I can't fix my own problems	**-0.20**	**0.000**
require me to be too vulnerable	**-0.23**	**0.000**
take too much time away from my academic work	**-0.24**	**0.000**
be a sign of weakness	**-0.33**	**0.000**
make me feel worse	**-0.38**	**0.000**
be a waste of time	**-0.46**	**0.000**

Table 4 includes the results of correlation between the retained experiential beliefs and intention. Engineering students who believed they would feel "hopeful" ($r = 0.45$, $p = 0.000$) upon thinking of seeking professional help for their mental health tended to have higher intention, while those who anticipated feeling "overwhelmed" ($r = -0.14$, $p = 0.008$) or "selfish" ($r=-0.11$, $p=0.046$) tended to have lower intention.

Table 4: Correlation of experiential beliefs with intention to seek help; "In this hypothetical scenario, how ___ would you feel about the idea of your seeking help from a mental health professional in the next 3 month."

	r	p
hopeful	**0.45**	**0.000**
scared	-0.01	0.920
selfish	**-0.11**	**0.046**
overwhelmed	**-0.14**	**0.008**

Tables 5 and 6 present the results of correlation between beliefs about others' expectations and beliefs about others' behavior and intention. Across both categories, the perceptions of others had a strong relationship with intention to seek help from a mental health professional. The only item that was not correlated was intention was the belief that members from my religious/spiritual organization would intend to seek help if they were struggling with their mental health. From these results, engineering students who believed that the people important to them would expect them to seek help, and would seek help themselves, were more likely to intend to seek help. Engineering students' classmates, professors, and advisors were all significantly influential.

Table 5: Correlation of beliefs about others' expectations with intention to seek help; "I would expect that _____ would think I [should / should not] seek help from a mental health professional in the next 3 months."

	r	p
my hometown community	**0.38**	**0.000**
my engineering classmates	**0.37**	**0.000**
my other family members	**0.36**	**0.000**
my racial/ethnic community	**0.36**	**0.000**
my parent(s)/guardian(s)	**0.35**	**0.000**
my engineering advisors	**0.31**	**0.000**
engineers in industry	**0.28**	**0.000**
my religious/spiritual community	**0.27**	**0.000**
my engineering professors	**0.23**	**0.000**

Table 6: Correlation of beliefs about others' behaviors with intention to seek help; "If they had this mental health concern, _____ would / would not seek help from a mental health professional in the next 3 months."

	r	p
my other family members	**0.28**	**0.000**
my parent(s)/guardian(s)	**0.28**	**0.000**
my engineering classmates	**0.24**	**0.000**
my hometown community	**0.21**	**0.000**
engineers in industry	**0.21**	**0.000**
my racial/ethnic community	**0.20**	**0.001**
my engineering advisors	**0.19**	**0.002**
my engineering professors	**0.19**	**0.001**
my religious/spiritual community	0.10	0.142

As with outcome beliefs, most of the beliefs about barriers and facilitators were associated with intention, as found in Table 7. Particularly, engineering students were more likely to intend to seek help if they believed they would be able to find a mental health professional who would be a good fit ($r = 0.33$, $p = 0.000$), that they would be familiar with the resources available to them ($r = 0.32$, $p = 0.000$), or that they would know when the concern was serious enough ($r = 0.28$, $p = 0.000$). On the other hand, engineering students who indicated that they believed they would be in denial of their need to seek help ($r = 0.19$, $p = 0.000$) or expected to prioritize their academics over their mental health ($r = -0.12$, $p = 0.030$) were less likely to intend to seek help.

Table 7: Correlation of beliefs about barriers and facilitators with intention to seek help; "In the next 3 months, I would expect _____."

	r	p
to be able to find a mental health professional who would be a good fit for me	**0.33**	**0.000**
to be familiar with the mental health resources available to me	**0.32**	**0.000**
to know when the mental health concern is serious enough	**0.28**	**0.000**
to have the option to go online to schedule an appointment with a mental health professional	**0.23**	**0.000**
to have support from someone who knew how to access professional help	**0.22**	**0.000**
to have the option to see a mental health professional through video chat	**0.21**	**0.000**
to be able to find a mental health professional conveniently located near me	**0.16**	**0.002**
mental health professionals would have limited appointment availability	**0.16**	**0.002**
to know how to find information about the mental health resources available to me	**0.14**	**0.005**
to have the option to see a mental health professional in person	**0.13**	**0.019**
it would be a requirement to make a phone call to schedule a mental health appointment	**0.12**	**0.021**
to be able to find a mental health professional who was from the same cultural background as me	**0.12**	**0.023**
to have the option to see a mental health professional on campus	**0.12**	**0.027**
my professors and/or advisors would tell me about available mental health resources	**0.11**	**0.038**
to have immediate walk-in access to a mental health professional	0.10	0.056
the symptoms of mental health concern would reduce my motivation to seek help	0.07	0.190
it would be a requirement to pay money to seek help from a mental health professional	0.02	0.694
the process of setting up an appointment with a mental health professional would be difficult	-0.01	0.838
to have little free time due to my non-academic commitments	-0.02	0.699
to only seek help if I reached a breaking point	-0.05	0.396
to have little free time due to my academic workload	-0.06	0.304
to prioritize my academic success over my mental health	**-0.12**	**0.030**
to be in denial of my need to seek help	**-0.19**	**0.000**

Discussion & Implications

The UE-MH-HSI was successfully reduced from 104 to 69 belief items, resulting in an approximate 12-minute reduction in the required time to complete. This resulted in a shorter "intervention" version of the instrument that will allow for feasible administration in varied institutional contexts. Analysis of the retained items revealed several broad factors associated with undergraduate engineering students' intention to seek help for a mental health concern: efficacy of treatment, stigma, time and academics, and knowledge about and access to resources. These factors serve as important targets for intervention.

Belief in the efficacy of professional mental health treatment (i.e., believing that seeking help would result in positive outcomes related to their mental health) was associated with a higher likelihood of intending to seek help. As such, workshops that highlight the benefits and effectiveness of professional treatment may improve help seeking in undergraduate engineers. Additionally, if students believed that seeking help would be a waste of time, that it would take too much time away from their academic work, that they would prioritize their academic success over their mental health, or other similar beliefs, they were less likely to intend to seek help. Workshops highlighting the link between mental health and academic performance could help to change these views. They could also be tied into workshops highlighting the efficacy of treatment, allowing for an efficient use of time and resources.

Intention to seek help was also linked to perceived knowledge of, and access to, resources. Engineering schools could employ informational sessions walking students through the available

resources, ensuring that they are familiar with these resources and know how to access them when the need arises [19]. Additionally, flyers listing key resources with a QR code to their student wellness website could be posted around engineering spaces on campus to serve as quick, basic access point. Faculty could also help to reinforce their students' knowledge of campus resources by incorporating it into their course syllabi and highlighting that information at key times throughout the semester, such as midterms and other stressful times.

Finally, beliefs related to stigma, such as beliefs that seeking help would result in them being perceived negatively, whether by themselves or by others, were also associated with decreased intention in engineering students. Similarly, the beliefs that students had about the attitude of their professors, advisors, and classmates towards seeking help were linked to help-seeking intention. Perceptions about the culture of engineering are well documented, with engineering described as fostering a "culture of stress," [1], and engineering students reporting a normalization of stress and reluctance to seek help because of it [1], [20]. Engineering students have discussed the impact of their engineering professors and advisors, noting that a perceived lack of flexibility around mental health leads to the perception that engineering is not supportive of student mental health, while faculty who are supportive are seen as notable exceptions, rather than the rule [21]. Students have also expressed a desire for normalized discussions about mental health in engineering [22]. Together, this highlights the importance of working to change the culture of engineering as it is perceived in order to improve the mental health outcomes of engineering students.

Conclusion

This study worked to create an intervention-focused instrument designed to identify beliefs held by undergraduate engineering students that influence their intention to seek help for a mental health concern. Through a quantitative approach, the instrument was successfully reduced to a feasible length of 15-20 minutes, and responses were analyzed to identify key beliefs associated with intention to seek help. Several beliefs related to the efficacy of treatment, knowledge of resources, and personal and perceived stigma were identified as important targets for interventions. Potential workshops and informational sessions targeting those beliefs, along with intentional efforts to improve the culture of engineering around mental health, could be beneficial in improving rates of engineering students' professional help seeking.

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