

Abstract (max 300 words) (Full report between 1500-4000 words)

PURPOSE

Medical students demonstrate levels of burnout and depression disproportionately higher than their non-medical peers. Despite this, little is known about rates of treatment acquisition and barriers to receiving care amongst students with mental health concerns. This study further characterizes rates of burnout, use of professional services, and obstacles to treatment for medical students at one institution.

METHODS

In June 2020, a 31-question survey was sent to 531 current and recently graduated medical students at the University of Michigan. Participation was anonymous and voluntary, and response to each question was optional. Results were collected for two weeks. Outcomes included self-reported measures of burnout, use of and satisfaction with professional mental healthcare services, barriers to care, comfort discussing mental health concerns with others, and suggestions for improvement.

RESULTS

The survey gathered 307 unique responses. Nearly half (48.2%, n=148) of all students reported experiencing at least one symptom of burnout, and the majority (80.8%, n=243) reported concern for their overall emotional well-being during medical school. Two-thirds (66.1%, n=203) further indicated having a new or previously diagnosed mental health concern in medical school, with over one-third (36.9%, n=75) of these students sharing they have never sought treatment. The most commonly reported barriers to care included lack of time, fear of negative career repercussions, and cost.

CONCLUSIONS

This survey demonstrated extraordinary concern for emotional well-being and unexpectedly high rates of diagnosed or perceived mental health concerns amongst medical students. Our institution is not immune to burnout and depression; these issues are only exacerbated when financial concerns, stigma, time, and fear prevent students from getting the help they need. Using student-driven feedback, these results are currently driving structural changes at our institution and can hopefully provide a more robust mental healthcare model for other institutions in the future.

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(This survey demonstrated significant levels of burnout amongst medical students and reemphasized the existence of several barriers to care. However, there was an unexpectedly high prevalence of concern for overall emotional well-being and diagnosed or perceived mental health concerns. Medical students are uniquely vulnerable to burnout and depression; these issues are exacerbated when financial concerns, stigma, time, and fear prevent students from getting the help they need. Using student-driven feedback, these results are currently driving structural changes at our institution and can hopefully provide a more robust mental healthcare model for other institutions in the future).

Introduction

The prevalence of depression and burnout in the medical profession is a well-studied phenomenon, with its effects seen at all levels of training. However, medical students are faced with the unique challenge of navigating a hyper-competitive atmosphere with little time designated for seeking help. This is a combination that naturally lends itself to rates of depression amongst medical students that are three times higher than age-matched peers outside of medicine, despite the fact that medical students have lower rates of burnout and depression prior to matriculation compared to this same group. Studies suggest burnout amongst medical students in the United States hovers around 50%, with 10% of students experiencing suicidal ideation during their time in medical school. Additionally, literature suggests that globally, nearly one-third of medical students experience depression, but fewer than 13% of these students are seeking treatment.

Less well-studied are the driving forces behind why these problems remain so prevalent amongst medical students and what institutions have done over the years to proactively address these concerns. Although many current efforts to support student mental health focus on extracurricular wellness programming, these changes often do not address the underlying structural issues that contribute to the erosion of student wellness. The literature describing proactive and preventative approaches to student mental health and wellness, including improving access to professional mental healthcare providers, is much smaller.

The research exploring why medical students do not seek treatment while experiencing a mental health concern is similarly limited, and the studies that do exist are older and may miss some of the more current pressures experienced by students. Literature by Tija (2005) and Givens (2002) demonstrate that depressed medical students are underutilizing professional services, with fewer than 30% of depressed students obtaining treatment. Across both studies, students expressed that lack of time was their main deterrent to receiving mental health care. Other notable barriers included lack of confidentiality, the stigma of receiving care, burdensome cost, fear of documentation within their academic record, and concerns about unwanted intervention. Since these studies, there have been no further contributions to the literature on this subject.

To address these gaps in current knowledge, this study quantitatively measured the rates of burnout and mental health concerns amongst students at our institution and their impressions of professional mental health services available to them. This report describes the creation, dissemination, and analysis of a needs assessment aimed to inform future curricular and structural changes.

Methods

Study Cohort

This study was approved by the University of Michigan Institutional Review Board (HUM00183042). From July 20-August 4, 2020, we disseminated a needs assessment survey to 531 current and recently

graduated medical students via the UMMS email listserv. This included current second-, third-, and fourth-year medical students; those on a leave of absence (LoA); students in the dual-degree Medical Scientist Training Program (MSTP); and recently graduated PGY-1 interns. First-year medical students were excluded from the survey, as data acquisition coincided with their first week of classes. At the time of this study, M2 (class of 2023) refers to students who just completed their preclinical curriculum, M3 (class of 2022) refers to students in the midst of their core clerkship year, M4 (class of 2021) refers to students who have completed their core clerkships and are applying to residency programs, MSTP students are dual degree MD/PhD students at different points along their training, and PGY-1 interns were the class of 2020 graduates of our institution.

Each participant received an email inviting them to engage in the study. Participation was voluntary, respondents were able to skip any question, and all responses were anonymous. Following completion of the survey, participants were offered compensation in the form of a \$5 Amazon gift card. Information collected for compensation purposes was not linked to any prior survey responses, ensuring anonymity.

Study Measures

All surveys contained the same 31 questions about demographics; burnout; satisfaction with, knowledge of, and utilization of mental health resources at our single institution; barriers to care; and student-generated ideas for improvement.

Burnout

Our survey utilized a non-proprietary single-item measure of burnout, which has been validated as a viable substitute for the single question Maslach Burnout Inventory (MBI) subscale on Emotional Exhaustion (MBI:EE) (Dolan, 2015). Respondents answered this single-item question on a five-point scale. A response of ≤ 2 signifies no symptoms of burnout, while ≥ 3 equates to one or more symptoms of burnout. Though the full-length MBI would be the gold standard method of evaluation, this would have been a lengthier and more costly alternative. The single-item version of the MBI scales has been used previously in major national surveys and was therefore deemed an appropriate substitution for the purposes of this survey (West CP, Shanafelt TD, Kolars JC JAMA. 2011 Sep 7; 306(9):952-60).

Emotional Well-being & Treatment Acquisition

To assess emotional well-being and perceived mental health concerns, students were asked to respond yes, no, or not sure to the following two questions:

Have you been concerned about your emotional well-being at any point during your time in medical school?

Have you had concerns about your mental health during medical school, either diagnosed or perceived? This includes both new and previously diagnosed mental health concerns.

For those who indicated having a mental health concern, they were asked whether they sought treatment for their concern, and their satisfaction with that resource. Finally, respondents were asked to rate their level of agreement to the statement, "My work schedule leaves me enough time for my personal/family life." A five-point Likert scale was used, ranging from strongly disagree to strongly agree.

Barriers to Care

The above sub-group of respondents who indicated that they had a mental health concern but did not seek care was provided with a list of potential barriers derived from the literature (Givens and Tiva). Respondents were asked to indicate all barriers that may have prevented them from seeking treatment. A free-text entry option was also provided.

Statistical Analysis

Our survey was created and disseminated using Qualtrics (Provo, UT). Descriptive statistics were tabulated using Microsoft Excel (Redmond, WA), and z-scores were calculated to compare burnout rates between classes. We used standard descriptive statistics and Wilcoxon/two-sample t test procedures as appropriate for univariate variables. *** We performed all analyses using ***, with statistical significance achieved at $p=0.05$.

Results

Of the 588 recipients of the survey, we received 307 total responses. Demographic data, including class year, sex, and race/ethnicity, can be seen in Table 1. Respondents of our survey were similar with regard to sex and race/ethnicity as compared to *** (all U.S. medical school graduates in 2018-2019 per the AAMC) ([AAMC](#)).

Burnout

Nearly half of all respondents (48.2%, $n=148$) reported at least one symptom of burnout (Table 2). When burnout rates were stratified by class, the classes of 2022 (clerkship students) and 2023 (pre-clinical students) were significantly more burned out than the class of 2021 (66.3% and 59.1% vs. 36.3%, both $p<0.05$). The class of 2021 was used as the comparison group because those respondents had completed both the pre-clinical curriculum and core clerkships by the time of survey administration. The rates of burnout in the other three student samples were not significantly different from the class of 2021 (Table 2).

Table 2: Rates of Burnout in All Respondents and By Class, MSTP, and Leave of Absence

	Total Responses¹	N (%)	P-value²
All Respondents	307	148 (48.2%)	--
Class of 2021 (M4)	91	33 (36.3%)	--
Class of 2022 (M3)	83	55 (66.3%)	0.00008
Class of 2023 (M2)	66	39 (59.1%)	0.005
Class of 2020 (PGY-1)	28	7 (25.0%)	0.267
MSTP	18	8 (44.4%)	0.516
Leave of Absence	10	6 (60.0%)	0.144

1. One respondent did not offer an answer to this question.
2. P-values are calculated with the class of 2021 as a comparison group.

Emotional Well-being & Treatment Acquisition

The majority of students (n=243, 80.8%) reported having had a concern about their overall emotional well-being at some point during medical school. When asked about mental health concerns specifically, two-thirds (n=203, 66.1%) reported either a diagnosed or perceived concern (both new and previously diagnosed). Of the 203 students with a self-reported mental health concern, more than one-third (n=75, 36.9%) have never attempted to seek treatment. Finally, nearly half (43%) of respondents feel that their medical school schedule does not leave them with enough time for personal/family life (defined as a response of “disagree” or “strongly disagree” to the statement, “My work schedule leaves me enough time for my personal/family life”).

Resource Usage and Satisfaction

Students can access professional resources both internally through the University (MSMH, UHS, CAPS, PES) as well as externally (Huron Valley Consultation, private therapists, primary care physicians). Of the 203 students reporting mental health concerns, 63.1% (n=128) stated they have sought out treatment. Over 90% of treatment was received at one of two programs: either through MSMH (51.6%, n=66) or their own established therapist (53.1%, n=68). In contrast, of the subset of students without active mental health concerns (33.6%, n=103), students most frequently believed they would first turn to their M-Home Academic Counselor for advice (32.0%, n=33). As academic counselors are not able to offer official or unofficial therapeutic services, the professional service students believed they would utilize first was their primary care provider (21.4%, n=22). This response was chosen over institution-specific resources, such as the MSMH program, campus CAPS, UHS, or PES.

Students who had previously accessed resources or were currently utilizing them were asked which programs they used and how satisfied they were with the outcome. The majority of respondents who utilized the MSMH program and personal therapists reported being “extremely satisfied” or “somewhat satisfied” with their experience, though they were slightly less satisfied with the MSMH program (74.6%, n=47 versus 88.9%, n=56). Data regarding utilization of programming outside of the MSMH program or personal therapists was limited.

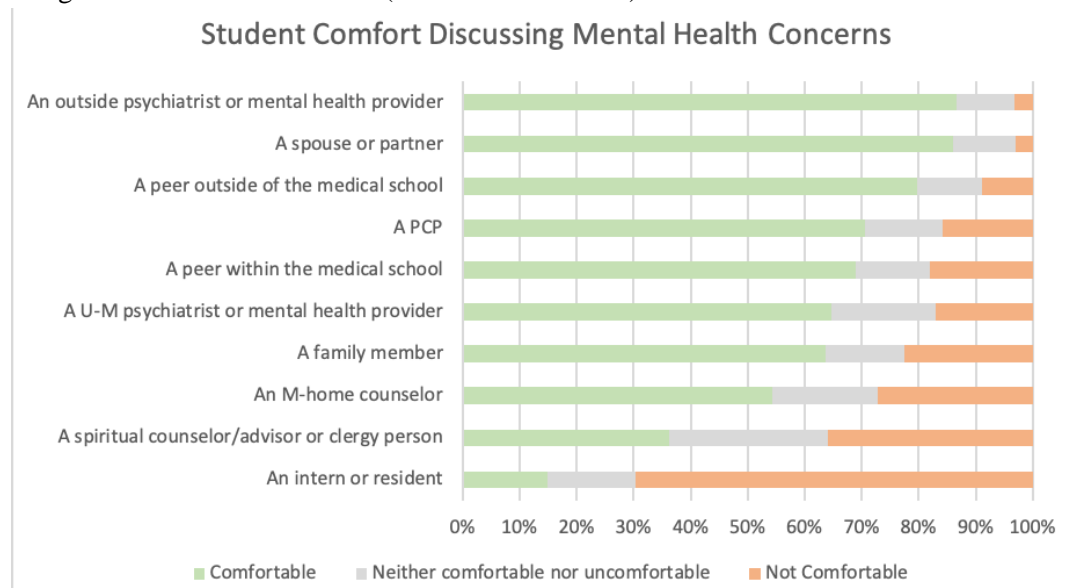
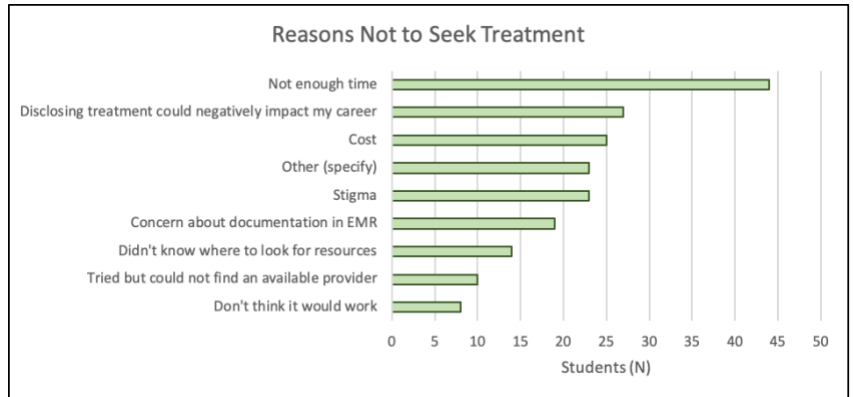
Barriers to Care

The list of barriers to care is demonstrated in Figure 1. We received 75 unique responses, 50 of which included more than one barrier checked. The most common obstacle was time (58.7% of respondents, n=44), followed by fear of having to disclose treatment during the course of their career (36.0%, n=27), and cost, with 33.3% (n=25) of students either denied care due to insurance/financial concerns, or did receive care but the cost ended up being prohibitive for continuation. The most common response to

‘other’ was that the health concerns were mild, self-treated, or went away with time (78.3% of ‘other’ responses, n=18).

Comfort Discussing Mental Health Concerns

Students were asked to rate whether they were comfortable, neutral, or not comfortable discussing a mental health concern with several individuals (Figure 2). Students reported the greatest comfort talking with a provider not affiliated with Michigan Medicine (86.0%, n=264), a spouse or partner (83.7%, n=257), or a peer not within the medical school (78.8%, n=242). Students are the least comfortable talking with interns or residents (14.7%, n=45). Only 53.7% (n=165) of students reported that they would be comfortable talking with their school-designated academic counselor (M-Home Counselor).



Important Characteristics of Mental Health Services

Students were asked to expand on the personal level of importance of several aspects of mental health treatment (Table 3). The aspects of mental health services that students feel are the most important (“extremely” or “very” important) are the quality of service offered (92.5%, n=284); scheduling ease (91.5%, n=281); and having flexibility of appointment times, such as weekends or after-hours scheduling (90.6%, n=278). However, the single most “extremely important” factor overall was the guarantee that seeking mental health care would have no negative impact on future career (77.2% “extremely important”, n=237). Cost and appointment expediency were also important to over 75% of students.

	Extremely important	Very important	Of average importance	Of little importance	Not at all important
Quality of service	60.90%	31.60%	5.50%	0.70%	0.30%
Ease of scheduling appointments	60.60%	30.90%	6.80%	0.30%	0.30%
Appointment flexibility	62.90%	27.70%	7.50%	0.70%	0.30%
No negative career impact	77.20%	12.70%	4.90%	2.00%	2.30%
Cost	54.10%	25.40%	15.00%	3.60%	1.00%
Expedient Appointment	45.90%	33.20%	16.60%	2.60%	0.70%
No MiChart*	27.70%	21.50%	23.80%	12.70%	13.00%
Office location: Medical school	14.70%	28.00%	36.20%	11.40%	8.80%
Office location: Hospital	13.00%	25.10%	42.70%	9.40%	8.80%

*Define MiChart
*No documentation in

the electronic health record that Michigan Medicine utilizes; MiChart.

	Quality of service	Ease of scheduling appointments	Appointment flexibility	No negative career impact	Cost	Expedient appointment	No MiChart	Office location - Med school	Office location - Hospital
Extremely important	60.9%	60.6%	62.9%	77.2%	54.1%	45.9%	27.7%	14.7%	13.0%
Very important	31.6%	30.9%	27.7%	12.7%	25.4%	33.2%	21.5%	28.0%	25.1%
Of average importance	5.5%	6.8%	7.5%	4.9%	15.0%	16.6%	23.8%	36.2%	42.7%
Of little importance	0.7%	0.3%	0.7%	2.0%	3.6%	2.6%	12.7%	11.4%	9.4%
Not at all important	0.3%	0.3%	0.3%	2.3%	1.0%	0.7%	13.0%	8.8%	8.8%

Student Suggestions

Finally, students were asked, “Do you believe the medical school should be doing more to support the mental health and well-being of its students?” The majority of students (n=239, 77.9%) said yes, while 16% had no opinion (n=49), and 6.2% said no (n=19). Students were given the option to provide a free text response with suggestions for improvement of professional mental health services for students, and 182 unique responses were recorded and coded according to common themes, as shown in Table 4. Most commonly discussed were the desire for more flexibility in the student schedule during their pre-clinical and core clerkship year (n=41), including annual opt-out check-ins or mental health screenings for all students (n=32), and access to free or reduced-cost treatment (n=30).

Student Suggestions for Mental Health Improvement at the University of Michigan Medical School	
	Suggestions, % (No./Total No.)
Time off/more flexibility in pre-clinical (M1) and clinical (M2) year (i.e. dedicated appointment times, weekends off, etc.)	22.5 (41/182)
Fewer 'wellness events', more focus on curricular/systems-level change (i.e. less busy work, reduce pre-clinical pace, pass/fail core clerkships)	20.9 (38/182)
Dedicated medical student therapist not affiliated with medical school	17.6 (32/182)
Regularly occurring opt-out check-ins/mental health screenings	17.6 (32/182)
Free/reduced cost access to unlimited therapy	16.5 (30/182)
Clarified/updated resources that are navigable (i.e. up-to-date list of therapists actively accepting patients with insurance/cost information)	15.4 (28/182)
Ensure confidentiality – no internal EMR records, ensure no negative career impact	7.1 (13/182)
Reduce stigma by talking about mental health more (students & faculty)	5.5 (10/182)
Other: Peer support groups, more support for students on leave of absence, hire more diversely, no improvements	5.5 (10/182)

Discussion

The results of this single-institution study fill a gap in the medical student well-being literature by describing the decisions made by medical students when choosing whether or not to access mental health treatment resources. In congruence with the broader burnout research, students at our institution have high rates of burnout and known or suspected mental health concerns. Our results demonstrated that burnout levels vary between classes, and although there are likely multiple confounders at play, the two classes with the highest rates of burnout were in the middle of their pre-clinical year and core clerkship year. Importantly, the UMMS curriculum has only one pre-clinical year, so matriculating students need to adapt very quickly to the pace of medical school. This likely adds to the known stressors experienced by all medical students when they transition to medical school (CITE). The clerkships are another stress point during the medical school curriculum (CITE). The varying levels of burnout between classes may represent an opportunity to offer more targeted mental health support programming to each medical student class.

Broad overview of the write-in text shows ___ themes in the preclinical years,... Meanwhile in the clinical years, the most prominent themes were _____. This is indicative of the extra stress that (Common M1 complaints revolved around the pace of the curriculum. Common M2 complaints centered around complete lack of time to maintain a therapeutic relationship with a counselor or psychiatrist, and little foresight into their schedules in order to even make appointments. There currently is no dedicated Most changes in the curriculum or additions to wellness efforts are instigated by a joint effort between administration and student representatives, however this process can miss many student voices. The free text responses were able to capture a broader view of what students thought would be more impactful. Main suggests_____.

Minimizing wellness events, turning attention and effort instead to institutional/curricular changes to improve wellness.

Of the nearly two-third of students who were able to access professional mental healthcare services, the majority were satisfied with their care, whether received through medical school-specific avenues or

through community providers. However, the fact remains that over one-third of students in need of help do not access it, a rate similar to that seen in other research (Tija and Givens). A key contribution that our findings make to the literature is a description of potential drivers of the barriers to access, including time, cost, stigma, fear of negative career impacts, and awareness of resources. Specific to UMMS, and likely many other medical institutions, is a lack of protected time for students to take care of their mental and physical well-being, especially during the core clerkship year, which adds to the difficulty in accessing mental health care. Many students expressed issues with the cost of appointments as well, and although students are required to have health insurance, the coverage for behavioral health varies widely, leading to discrepancies in accessing local resources. These discrepancies have resulted in exorbitant out-of-pocket costs for some students, who have at times paid upwards of \$400 for a single appointment. Additionally, policies concerning the reporting of mental health treatment to residency programs and licensing boards remains unclear, with many students avoiding treatment because of the fear that future employers would view such treatment unfavorably. Not only did these barriers prevent a sizable portion of students in need from receiving care in the first place, but they also led to the premature cessation of care for many students. Not having affordable, sustainable access to resources in an environment where students feel uncomfortable seeking these services will continue to have dire consequences for students unless changes are made.

Limitations

Limitations of our study include population samples and timing of data collection. This survey was only implemented at a single institution, and although we obtained results from four classes (M2, M3, M4, PGY-1), our survey was not completed by the new fall matriculating class at the time of survey dissemination. The decision to not involve the matriculating class of 2024 was made given that the survey release coincided with their first week of class, and we did not feel students would be able to adequately respond to questions regarding school-wide resources given their limited exposure to the curriculum. We achieved a survey response rate of 52.2%; therefore, we cannot guarantee that all views held by UMMS students regarding this topic are represented within this data report. Although our survey results track similarly to national rates of depression and burnout, our survey was specific to the resources available to students only at UMMS, and therefore cannot be extrapolated to the larger US medical school community when it comes to utilization of and satisfaction with the resources discussed. Additionally, certain confounders may have affected our results, including the concurrent COVID-19 pandemic, the survey's administration towards the end of the academic year, and the recent death of a first-year student by suicide. Despite these limitations, our survey results track similarly to national rates of depression and burnout seen in several other single- and multi-institutional studies [cite again]. Though this was a single institution study, it is likely that these results would replicate across other U.S.-based medical institutions and should cause great concern.

Next Steps

Following this evaluation, steps have been taken to re-evaluate the Medical Student Mental Health Program, and a workgroup has been established consisting of students, deans, psychiatrists, and necessary stakeholders. Key program goals that have been identified are as follows: increase the access to mental healthcare by increasing the number of psychiatrists and psychologists available specifically to medical

students; establish an opt-out check-in process similar to those instituted by the Keck School of Medicine in order to catch those students who may need mental health services in the future and normalize the process of checking in to reduce the stigma surrounding mental health care; place the burden of finding available mental healthcare providers on a professional familiar with these services instead of on the individual student; and create protections into all of the programming that would ensure confidentiality. Future reports of our procedures, implemented changes, and the impact of those changes will be forthcoming.

Conclusion

Our findings clearly demonstrate that utilization of mental health resources in their current state are not adequate to support medical student needs. As the burnout pandemic continues to spread across medical schools, we hope that peer institutions use our model to evaluate their own mental health infrastructure. We hope that this report can catalyze the changes that need to be made to professional mental health programming for medical students, as well as to the ideologies surrounding mental healthcare access within the medical community at large. Just as physicians are taught to help patients prioritize and normalize a holistic approach to wellness and health, medical schools are in the unique position to help students establish these same healthy routines of self-care and wellness prior to entering an equally high-risk environment for mental health concerns in residency and beyond. By taking a proactive approach to mental health, medical schools will see short-term benefits resulting in a happier and healthier student body, and the long-term benefits of a well-adjusted, productive, and confident future resident and attending physicians.

Table 1.

Demographics of survey respondents as compared to the most recently available national data of all U.S. medical students.

	Survey Respondents (n=307)	All Students at Single Institution (n=*)	U.S. National Data (n=19,628)	P value
Race/Ethnicity, n (%)				
<i>American Indian/Alaska Native</i>	3 (0.98)		38 (0.2)	
<i>Asian</i>	68 (22.1)		4,299 (21.6)	
<i>Black/African American</i>	24 (7.8)		1,238 (6.2)	
<i>Hispanic/Latinx</i>	16 (5.2)		1,063 (5.3)	
<i>Native Hawaiian/Other Pacific Islander</i>	0 (0.0)		9 (0.1)	
<i>White</i>	171 (55.7)		10,879 (54.6)	
<i>Other</i>	22 (7.2)		380 (1.9)	
<i>No Answer</i>	3 (0.98)		--	
Sex, n (%)				
<i>Male</i>	102 (33.2)		10,382 (52.1)	
<i>Female</i>	201 (65.5)		9,555 (47.9)	
<i>Transgender</i>	3 (0.98)		--	
<i>No response</i>	1 (0.33)		--	
Response by class, n (%)				
<i>Class of 2020 (PGY-1)</i>	28 (9.0)			
<i>Class of 2021 (M4)</i>	91 (30.0)			
<i>Class of 2022 (M3)</i>	94 (32.0)			
<i>Class of 2023 (M2)</i>	66 (21.0)			
<i>MSTP</i>	18 (6.0)			
<i>LoA</i>	10 (3.0)			

References