ORIGINAL RESEARCH

Understanding the Needs of Undergraduate Student Athletes as they Apply to Health Professional School

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Introduction: Many attributes student athletes gain from their sport are skills that prepare them to be excellent medical students and physicians. However, long practices, travel, and fitness training limit student athletes' opportunities to engage in extracurricular activities deemed important to be a strong applicant. This study assesses the current state of mentoring and application preparedness to better support the needs of student athletes.

Methods: Our study population consisted of University of Michigan student athletes (age≥18) and medical students at the University of Michigan Medical School self-identified as former collegiate student athletes. We deployed two anonymous surveys with multiple choice and free response questions to assess unmet needs of current and former student athletes.

Results: 61 student athletes responded to the student athlete survey. 37% (19/52) self-identified as underrepresented in medicine. Only 52% (28/54) of respondents agreed they had a comprehensive understanding of activities to become involved in to be a competitive applicant. The most prominent theme identified was desire for more information on application timeline and requirements. There were 48 responses to the medical student survey. 22% (9/41) respondents reported utilizing their athletic department's pre-health advising program and 51% (21/41) reported no program available at their institution. Time management was the most prominent theme represented for unique challenges faced.

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Conclusions: Student athletes face unique challenges finding opportunities that fit demanding schedules. Dedicated pre-health mentoring and advising is needed to help student athletes succeed in pursuing graduate health programs. Implementation of targeted peer mentoring programs can help provide schedule-tailored resources, as well as serve as a means to increase diversity in medicine.

Keywords

Student-Athlete • Needs Assessment • Mentorship • Athletes • Medical School Admissions

Introduction

There are over 520,000 student athletes competing at the collegiate level in the United States. Competing in athletics at this level requires high levels of discipline, time management, and teamwork.[1] These attributes, among others, are also necessary to succeed as a medical student and healthcare professional. Multiple studies have highlighted the parallels between the skills needed to succeed in high-level athletics and in the medical field, and found that compared to their peers, student athletes may perform better on standardized tests (i.e. United States Medical Licensing Examinations,[2] receive higher faculty ratings during residency,[3,4] experience decreased burnout, and have more continued motivation.[5,6] A recent systematic review further supported the benefits of prior athletic experiences on health career success, specifically indicating evidence for student athletes demonstrating increased surgical skill proficiency and decreased burnout rates as medical students and residents.[7] Attributes highlighted in these studies include receptiveness to criticism, time management, resiliency, team participation, burnout coping mechanisms, and performing under pressure. These findings suggest that student athletes develop skills that prepare them for success in the medical field.

Yet, there are many challenges associated with being a pre-health student-athlete. According to the National Collegiate Athletic Association (NCAA), an athlete should be practicing at most 20 hours a week. However, this does not include other athletic obligations including optional workouts, injury treatment, and travel time. A study by the NCAA in 2019 demonstrated Division 1 college athletes reported spending an average of 33 hours a week on athletic commitments.[8] College athletes are also at a higher risk of insufficient sleep due to these increased demands on time – a study by Mah et al. found that 39% of Division 1 college athletes reported inadequate amounts of sleep (regularly less than 7 hours) at a single institution.[9] On top of these obligations, according to the AAMC applicant data from 2019, 93% of medical school applicants have volunteered in a healthcare field, 95% have shadowed a healthcare professional, and 60% have participated in laboratory research apprenticeship in college.[10] These activities, viewed by many admissions committees as indicative of the applicant's commitment and suitability to pursue a health professions career, often do not align with athletic schedules. Navigating pre-health requirements while competing poses unique challenges to pre-health student athletes that may impact their emotional and physical health, as well as their candidacy. Peer mentoring for student athletes, in addition to traditional pre-health advising, has the opportunity to further support student athletes and provide perspectives on how to navigate a high level of competition while being a pre-health student.

To better understand the needs of student athletes and best help them prepare for medical school, dental school, physician assistant school, and other health professional schools, we collected data on overall satisfaction with the Michigan Athletes Towards Careers in Healthcare (MATCH) program established through the Michigan Athletics Career Center (MACC). MATCH offers students the opportunity to be a part of a student group focused on healthcare graduate school preparedness. Bi-weekly meetings on topics such as shadowing, research, and being a pre-health student seek to create community and collaboration between pre-health student-athletes. MATCH is a student directed initiative that augments the *Doctor Is In* Program offered through the MACC that provides student athletes one-on-one advising with career health professionals.

We suspected that there are specific constraints that student athletes experience given how physically and mentally demanding being a student athlete can be. The goal of this cross-sectional survey study was to assess the current state of mentoring and application preparedness and adjust the provided support to meet the needs of student athletes through peer-to-peer mentorship with medical students.

Methods

Our study population consisted of current University of Michigan student athletes (age≥18) who are members of MATCH (approximately 80 students) and current medical students at the University of Michigan Medical School (UMMS) (approximately 700 students). Although the medical student survey was sent to all medical students at the University of Michigan, students were instructed to only complete the survey if they self-identified themselves as former collegiate student athletes. Two anonymous web based Qualtrics surveys were deployed via email to these study populations and data was collected from September 22nd, 2022 to November 8th, 2022. Both surveys consisted of free-text and multiple-choice questions (MCQs). The surveys were piloted by three current UMMS medical students, as well as two current members of MATCH. Participants were not compensated. This study received IRB exemption by the IRB at the University of Michigan HUM00219714.

Current student athlete survey questions included demographic information, future career plans, perceptions of "gap years" and their plans to take one, and timing of selecting to pursue a career in healthcare. Information was collected on students' current and past use of pre-health advising services through the MACC. Students were asked to choose their most significant barriers to utilizing pre-health career advising and how the program could best meet their needs in the future. Students were given Likert Scale statements to assess whether their current needs were being met by the pre-health advising program currently offered. A net promoter score was used to assess likelihood of respondents recommending MATCH to a friend or teammate. The full text of the undergraduate survey is available in Supplemental Content Table 1.

The survey sent to medical students included questions on year in medical school, undergraduate institution, utilization of pre-health advising programs, which services respondents wish they had as a pre-medical student athlete, and whether they took a gap year. Additionally, medical student respondents rated their satisfaction with access to various pre-health services and identified the biggest barriers they faced when pursuing pre-medical extracurricular activities. The survey characterized respondents' perspectives on unique challenges faced by student athletes pursuing a healthcare career. The full text of the medical student survey is available in Supplemental Content Table 2.

Table 1. Demographic of Current Student Athlete Survey

Demographics:	**N**	**%**
Sex (N=52)		
Male	11	21%
Female	41	79%
Race (N=53)		
Black or African American	5	9%
White	39	74%
Asian	12	23%
Native Hawaiian or Pacific Islander	2	4%
Hispanic or Latino	4	8%
Representation (N=52)		
Underrepresented in medicine	19	37%
Family from low socioeconomic background	3	6%
First in their family to apply to a healthcare professions school	17	33%
First in family to go to college	2	4%
First language not English	1	2%

Table 2. Current student athlete survey respondent satisfaction with pre-health resources and opportunities during their time as an undergraduate student

	MATCH has prepared me well to apply to a health professional school (N=53)		**Comprehensive understanding of activities to become involved in to be a competitive applicant (N=54)**		**Comprehensive understanding of the requirements to apply to my health professional program (N=54)**		**Comprehensive understanding of different health professional career options (N=54)**		**Comprehensive understanding of the timeline to apply (N=54)**	
Level of Satisfaction	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Strongly Agree	5	9.43%	7	12.96%	7	12.96%	11	20.37%	10	18.52%
Somewhat Agree	20	37.74%	21	38.89%	20	37.04%	23	42.59%	17	31.48%
Neither Agree nor Disagree	28	52.83%	6	11.11%	10	18.52%	10	18.52%	8	14.81%
Somewhat Disagree	0	0.00%	18	33.33%	15	27.78%	10	18.52%	15	27.78%
Strongly Disagree	0	0.00%	2	3.70%	2	3.70%	0	0.00%	4	7.41%

Summary statistics generated through Microsoft Excel were used to analyze demographic and MCQ survey data. An inductive coding approach was used for the thematic analysis of the free text responses. Four reviewers independently reviewed the responses to identify codes and common patterns (CS, LG, BC, and NK). A fifth reviewer reconciled discrepancies (AN).

Results

Current Student Athlete Survey Results

There were a total of 61 respondents to the current student athlete survey. Table 1 depicts the demographics of the respondents. Fifteen sports were represented, with track and field having the greatest representation with 15 student athlete responses. Other sports represented were: Cross-country, 11; Baseball, 1; Cheerleading, 7; Dance, 4; Field Hockey, 4, Gymnastics, 4; Lacrosse, 1; Rowing, 2; Soccer,2; Softball, 2; Swimming/Diving, 1; Volleyball, 3; Water Polo, 6; and Wrestling, 1. There were no student athletes represented from Football, Basketball, Golf, Hockey, or Tennis.

When asked what graduate school program respondents were considering, 69.2% (36/52) respondents indicated they were interested in medical school. Other graduate school programs included 13.5% (7/52) interested in physician assistant programs, 5.8% (3/52) in physical therapy, 3.8% (2/52) each in dental school and occupational therapy programs, and 1.9% (1/52) respondent each interested in nursing, post-bacc programs, veterinary school, or public health programs. At the time of survey completion, 98.1% (52/53) respondents were currently completing an undergraduate degree program and 1.9% (1/53) was completing a post-baccalaureate program. Of the 52 undergraduate degree pursuing students, 19.2% (10/52) planned to graduate in 2023, 30.8% (16/52) in 2024, 17.3% (9/52) in 2025, and 32.7% (17/52) in 2026. Gap year information was available for 51 survey respondents; 43.1% (22/51) respondents planned on taking a gap year prior to graduate school, 19.6% (10/51) did not plan on utilizing a gap year, and 37.3% (19/51) were undecided. Of these respondents, 54.9% (28/51) believed that a gap year would be helpful to their chances of being accepted into a graduate health professional program, 3.9% (2/51) believed it would be harmful, 21.6% (11/51) indicated that a gap year would neither harm nor help their chances, and 43.1% (10/51) were uncertain about how a gap year would affect health professional school matriculation.

Satisfaction and perceived effectiveness of the MATCH program was assessed for 48 survey respondents. About 77.1% (37/48) of students at the time of survey indicated that they were happy with their current access to mentorship and advising services. When students were asked whether MATCH has prepared them well to apply to health professional school, almost half of respondents strongly agreed or somewhat agreed (Table 2). Similarly, only about half of respondents strongly agreed or somewhat agreed that they had a comprehensive understanding of what types of activities they should become involved in to be a competitive applicant. A net promoter score was utilized to determine what percentage of respondents would recommend MATCH to a friend or teammate revealing 66.7% (32/48) athletes would recommend MATCH, 25% (12/48) neither recommended or would not recommend, and 8.3% (4/48) would not recommend MATCH to a friend or teammate.

Barriers to utilizing MATCH were assessed for 56 survey respondents. 64.3% (36/56) indicated conflict with practices and competitions as the biggest barrier to utilizing MATCH services, 53.6% (30/56) cited conflict with their school classes, and 57.1% (32/56) student athletes reported low energy and fatigue. Other barriers included event schedule not communicated/

marketed effectively (17.9%, 10/56); limited availability of advising session times (8.9%, 5/56); complicated advising session scheduling tool (3.6%, 2/56); and other: work (1.8%, 1/56). Student athletes provided responses to survey questions reflecting the current utilization of the MATCH program. Introduction to the MATCH program occurred in freshman year for 41% of respondents, and similarly, 33% of respondents first attended a MATCH sponsored event or advising session during their freshman year. Twelve respondents had not yet attended a MATCH event or advising session at the time of survey completion. 57% of respondents indicated that they had not yet utilized an individual advising session through MATCH and 25% of respondents had not yet attended an MATCH group event.

Qualitative analysis for the current student athlete survey was conducted for the free-text response question "*What ideas do you have for how MATCH could improve to best meet your needs as a pre-health student-athlete?*" The most prominent theme identified in these responses was desire for more information on application timeline and requirements. Additional themes identified for this question can be found in Table 3.

Table 3. Current Student Athlete Qualitative Survey Response Themes (N=23)

Undergraduate Student Athlete Qualitative Responses Themes	
Question: ***What ideas do you have for how MATCH could improve to best meet your needs as a pre-health student-athlete?***	
Theme	**Number of Responses**
Application Timeline / Requirements	7
Gap year information	2
None	4
Hard copy reference materials	2
Course / major selection and advising	3
Access to shadowing	6
More diverse health care career advising /information (not just medical school)	5
General mentoring / advising	5
"I don't know"	1
Clinical experience / hours	1
Community outreach / volunteer opportunities	5
Access to research	2
Logistics of meetings (time of meeting, frequency of meeting, format)	3
Networking opportunities	2
Entrance exam (MCAT, GRE, etc.) study tips	1
Other	2

Medical Student Survey Results

There were a total of 48 responses to the medical student survey. 33.3% (16/48) of respondents were in their first year of medical school, 18.8% (9/48) in their second year, 22.9% (11/48) in their third year, and 10.4% (5/48) in their fourth year, and 2.1% (1/48) on an unspecified leave of absence. 12.5% (6/48) of respondents indicated they were currently in a dual-degree program. 25% (12/48) of respondents attended the University of Michigan for their undergraduate degree and 75% (36/48) of respondents attended another university for their undergraduate degree. Gap year information was available for 41 survey respondents; 92.7% (38/41) took at least one gap year and 7.3% (3/41) took no time off between graduating from their undergraduate institution and matriculating into medical school.

Utilization of the *Doctor Is In Program* (or similar program at another university) was available for 41 of the survey respondents. 17.1% (7/41) of respondents reported using the *Doctor Is In Program* at the University of Michigan, 4.9% (2/41) students reported using a similar advising program at different undergraduate institutions, 26.8% (11/41) students reported not using a pre-health program, and 51.2% (21/41) respondents reported no such program available at their undergraduate institution. Forty-one medical students provided responses reflecting their level of satisfaction with various services and opportunities while an undergraduate pre-health student. About 63% of respondents felt happy with mentorship and advising services and about 63% of respondents reported feeling happy with access to research opportunities they had as an undergraduate student. When comparing those who attended the University of Michigan, a greater proportion of students (8/11, 72.7%) were happy with their access to mentorship and advising comparted to students who went to other undergraduate institutions (60%, 18/30). Complete satisfaction responses for medical student survey respondents are in Table 4.

Table 4. Medical Student survey respondent satisfaction with pre-health resources and opportunities during their time as an undergraduate student (N=41)

	Mentorship/ Advising Services		Research Opportunities		Community Service/ Volunteering		Health Professions Shadowing		Patient Contact Hours	
Level of Satisfaction	**n**	**percent**	**n**	**percent**	**n**	**Percent**	**n**	**percent**	**n**	**percent**
Extremely happy	11	26.83%	12	29.27%	10	24.39%	7	17.07%	1	2.44%
Somewhat happy	15	36.59%	14	34.15%	18	43.90%	11	26.83%	12	29.27%
Neither happy nor unhappy	5	12.20%	10	24.39%	8	19.51%	10	24.39%	9	21.95%
Somewhat unhappy	8	19.51%	4	9.76%	5	12.20%	13	31.71%	15	36.59%
Extremely unhappy	2	4.88%	1	2.44%	0	0.00%	0	0.00%	4	9.76%

Qualitative analysis on medical student survey free-text responses was assessed for the question "*What services or information do you wish you had as a pre-medical undergraduate student-athlete?*" The most prominent themes found in these responses were students wishing they had more access to general mentoring/advising and access to research opportunities. Qualitative analysis of key themes was also assessed for the question "*What unique challenges do you believe student-athletes face as they pursue a pre-health career?*" The most prominent themes represented in responses to this question were time management (including balancing academic obligations with athletic requirements), learning how to market oneself and skills gained from athletic career, and the logistics of team obligations interfering with other academic/extracurricular opportunities. Additional themes identified for each question can be found in Table 5.

Table 5. Medical Student Qualitative Responses Themes

Question: *What services / information do you wish you had as a pre-medical undergraduate student athlete?* **(N=37)**		**Question:** *What unique challenges do you believe student athletes face as they pursue a pre-health career?* **(N=35)**	
Theme	**Number of Responses**	**Theme**	**Number of Responses**
Interview prep	10	Balancing academic obligations with athletic requirements	19
Grad school application review/editing	12	Time management	19
Tutors	4	Coach/athletic staff discouragement	1
Application Timeline / Requirements	11	Logistics of team obligations interfering with other academic /extracurricular opportunities	15
Gap year information	0	Maintaining high GPA	3
None	0	Physical exhaustion	3
Hard copy reference materials	0	Peer mentor	3
Course / major selection and advising	3	Lack of access to advisors / tutors	4
Access to shadowing	12	Learning how to market oneself and skills gained from athletic career	15
More diverse health care career advising /information (not just medical school)	0	Other	2
General mentoring / advising	13		

(*Continued*)

Table 5. (*Continued*)

Question: *What services / information do you wish you had as a pre-medical undergraduate student athlete?* (N=37)		Question: *What unique challenges do you believe student athletes face as they pursue a pre-health career?* (N=35)	
Theme	**Number of Responses**	**Theme**	**Number of Responses**
"I don't know"	0		
Clinical experience / hours	2		
Community outreach / volunteer opportunities	9		
Access to research	13		
Logistics of meetings (time of meeting, frequency of meeting, format)	2		
Networking opportunities	3		
Entrance exam (MCAT, GRE, etc.) study tips	1		
Other	6		

Discussion

Our findings indicate that there is a need for dedicated pre-health mentoring and advising to help student athletes succeed in pursuing graduate health programs. Many current student athletes at our institution have not yet been able to utilize existing advising services largely due to conflict with practices and competitions, as well as low energy and fatigue. Although we did not have a sample from the non-athlete population at our institution to compare to, it appears from our survey results that difficulty with utilizing existing advising was hindered by the time student athletes spend practicing and in competition, leaving less time for academic advising sessions. Similarly, many former student athletes were not using pre-health advising or did not have it available to them. A lack of advising is especially concerning given that only half of student athlete respondents understood requirements to apply to graduate school and the type of extracurricular activities they should be pursuing to be a competitive applicant. There remains a gap in meeting the specific needs of pre-health athletes, one which could be filled with need-based programming and expansion of flexible mentorship.

The demands of being a student-athlete leave little room for additional activities outside of one's sport and schoolwork. Even with a student athlete specific program available to students at our institution, almost 65% of students indicated issues finding time for advising due to conflict with practices and competitions and around 55% citing both conflict with their school classes and low energy and fatigue as reasons for not utilizing advising. Given these time constraints to meet with an advisor, it is increasingly complicated to add volunteering, research, and patient contact hours onto a busy, often inflexible, schedule. A student athlete-specific advising and mentoring program can help connect student athletes with resources and opportunities that are

conducive to their athletic and academic schedules. For example, a weekly mid-day volunteering opportunity at the hospital will likely not work for a student athlete who has daily morning class and afternoon practice, but this may work for an undergraduate who does not have the constraint of practice and can schedule their classes in the afternoons and evenings to accommodate volunteering and research opportunities.

Unfortunately, the experiences of pre-health student athletes are not unique. The GOALS Survey is a quadrennial, NCAA study of the experiences and well-being of current college athletes that we compared our survey responses to. The 2019 GOALS survey included 22,000 student athletes who spent a median of 31-42 hours per week participating in their sport. When students who completed the GOALS survey were asked what they wished coaches and administrators talked more about, 41% of male athletes and 61% of female athletes cited "preparing for a career after college." Mentoring programs and student athlete-specific advising programs can help to fill this gap identified in both the GOALS survey and our single-institution survey. Another salient finding of the GOALS survey was that 27% of male athletes and 31% of female athletes wish there was more discussion around time management.[8] This aligns with the qualitative analysis results from our medical student survey that two of the most prominent themes of unique challenges student-athletes face as they pursue a pre-health career were time management and team obligations interfering with other academic/extracurricular opportunities.

Twenty-three respondents in our undergraduate survey identified as underrepresented in medicine. Review of our institution's admission data showed only five student athletes that were considered underrepresented in medicine were admitted to medical school out of the 235 former student athletes that were admitted to our institution over the last eight years. The NCAA Demographics database race and ethnicity data from 2022 shows that 16% of all NCAA student athletes identified as Black, 7% identified as Hispanic or Latino, 5% identifying as two or more races, and another 5% identifying as international.[11] Providing mentorship and guidance to the diverse student athlete population provides a means for continuing to increase representation from traditionally underrepresented groups in medicine. It should therefore be a priority to identify and support the needs of this community in addition to supporting diversity in medical school admissions in the general population.

To help address these needs, the Athletes in Medicine (AIM) program at the University of Michigan Medical School has implemented a mentoring program and partnership with the Michigan Athletics Career Center (MACC). AIM differs from MATCH as it is a medical student run organization to complement MATCH, and it provides individualized mentorship to student athlete members of MATCH. To date, our organization has paired 36 medical student mentors who were formerly collegiate athletes with 47 student athlete mentees for one-on-one mentorship. Additionally, AIM has worked closely with the MATCH leadership to provide advice from established health professionals in various fields and to assist in planning the annual pre-health conferences through the Michigan Athletics Career Center. Future plans for our mentoring program include deploying a survey to all undergraduate student athletes who participated in the mentoring program a year after implementation to assess student satisfaction and program utilization.

The finding that about half of the medical student respondents did not have a student-athlete specific, pre-health advising program available at their undergraduate institution exemplifies the need for adoption of parallel programs like MATCH and AIM at other institutions. Additionally, this number is likely an underestimate of the availability of pre-health specific mentoring at other institutions due to 25% of respondents attending the University of Michigan, where such a program was available. We hope that the connection started between the medical school and the career center can serve as a model for other medical school-affiliated

universities. Our student organization strives to serve as a framework for future medical school mentoring programs.

Limitations

Our results consisted of self-reported outcomes which may contain bias from respondents. We acknowledge that 79% of respondents were female, which may not represent the sex distribution of the student athlete population. Additionally, this was a single-institution study only surveying medical students and undergraduate student athletes at the University of Michigan, with 25% of the medical student respondents having attended the University of Michigan for their undergraduate education. We also recognize our study lacks a non-athlete control group and that surveying this group would allow us to specify differences that are unique to student athletes. Specifically, we acknowledge that lack of diversity in medicine is not only specific to the student athlete population but to the population as a whole and it is important to support all means of creating greater representation of minorities in medicine. Future work should assess the needs of athlete and non-athlete pre-medical students, as well as assess the needs across other institutions in order to develop programs to best meet the needs of student athletes at those institutions.

Conclusions

Student athletes have been shown to possess qualities that make them successful as medical trainees and healthcare professionals. However, in order to matriculate into medical school, pre-health student athletes face a number of challenges in addition to those faced by the traditional pre-health undergraduate student. Our survey found that time management, knowledge of the application process, and access to resources such as shadowing, research, and volunteering that fit in with a busy student athlete schedule were prominent barriers that limit a student athlete's ability to be adequately prepared to apply to health graduate school. Near peer mentoring programs, such as AIM at our institution, have the potential to fill in the gaps in advising and mentoring to help prepare student athletes to be competitive candidates for health graduate school. Additionally, tailored advising and mentoring support allows for the opportunity to increase diversity of matriculating medical student classes for students underrepresented in medicine.

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Supplemental Content 1: Current Student Athlete Survey Questions

Q1: I am happy with my current access to _____. Select all that apply.
- Mentorship/advising services
- Research opportunities
- Community service/volunteering
- Health professions shadowing
- Patient contact hours

Q2: What are the biggest barriers to utilizing MATCH services/events? Select all that apply to you.
- Conflict with practices/competitions
- Conflict with school class schedule
- Complicated advising session scheduling tool
- Limited availability of advising session times
- Event schedule was not communicated/marketed effectively
- Low energy/fatigue after attending class or practice
- Other (free text response)

Please indicate the extent to which you agree or disagree with the following statements:

Q3: MATCH has prepared me well to apply to a health professional school.
- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q4: I have a comprehensive understanding of different health professional career options.
- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q5: I have a comprehensive understanding of the requirements to apply to my health professional program of interest.
- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q6: I have a comprehensive understanding of the timeline to apply to my health professional program of interest.
- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q7: I have a comprehensive understanding of what types of activities I should become involved in to be a competitive applicant to my health professional program of interest.
- Strongly disagree

- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q8: What ideas do you have for how MATCH could improve to best meet your needs as a pre-health student-athlete? Please feel free to also use this space to note particular concerns or questions you may have regarding applying to graduate school or exploring healthcare careers.

- (free text response)

Q9: Please rate the likelihood that you would recommend MATCH to a friend/teammate? (1-10)

- 0: Not likely at all
- 10: extremely likely
- Q10: How did you learn about MATCH?
- Student athlete
- Coach
- Michigan Athletics Career Center (MACC)
- Social Media
- MACC website
- I have not previously heard about MATCH
- Other (free text response)

Q11: When did you first hear about MATCH?

- Prior to undergrad
- Freshmen year
- Sophomore year
- Junior year
- Senior year
- After graduation
- I have not previously heard about MATCH
- Other (free text response)

Q12: when did you first utilize an MATCH event or advising session?

- Prior to undergrad
- Freshmen year
- Sophomore year
- Junior year
- Senior year
- After graduation
- I have not previously heard about MATCH
- Other (free text response)

Q13: How many MATCH individual advising sessions (i.e. with Dr. Wasco/Wooliscroft) do you utilize per year?

- 0
- 1-3
- 4-6
- 6-10
- More than 10

Q14: How many MATCH sponsored group events (i.e. MATCH Conference) have you attended?

- 0
- 1-3

- 4-6
- 6-10
- More than 10

Q15: What sport(s) do you play? Select all that apply.

- Baseball
- Basketball
- Cheerleading
- Cross country
- Dance
- Field hockey
- Football
- Golf
- Gymnastics
- Ice hockey
- Lacrosse
- Rowing
- Soccer
- Softball
- Swimming/diving
- Tennis
- Track and field
- Volleyball
- Water polo
- Wrestling

Q16: What graduate school program(s) are you considering currently? Select all that apply.

- Dental
- Medical
- Advanced nursing
- Occupational therapy
- Physician assistant
- Physical therapy
- Post-bacc program
- Other (free text response)

Q17: What is your expected year of graduation?

- 2023
- 2024
- 2025
- 2026
- Other (free text response)

Q18: Are you currently completing an undergraduate degree or graduate degree?

- Undergraduate
- Graduate
- Post-bacc

Q19: How do you describe your racial background? Select all that apply from US Census definitions.

- Black or African American
- American Indian or Alaska Native
- Asian

- Native Hawaiian or other Pacific Islander
- Other race
- Hispanic/Latino
- White
- Prefer not to say

Q20: How do you describe your gender identity? Please select your single best option.
Man (cisgender)

- Woman (cisgender)
- Man (transgender)
- Woman (transgender)
- Non-binary
- Other (free text response)
- Prefer not to say

Q21: One of the goals of the MATCH program is to increase diversity in health professional school applicants. Please select all that apply to you.

- My family is from a low socio-economic background
- I am the first in my family to apply to a healthcare professions school
- I am the first in my family to go to college
- English was not my first language
- None of these apply to me

Q22: Do you plan on taking a "gap year" prior to starting graduate school?

- Yes
- Maybe
- No

Q23: I believe taking a "gap year" is _____ to my chances of being accepted into a graduate health professional program.

- Harmful
- Helpful
- Neutral
- Uncertain

Supplemental Content 2: Medical Student Survey Questions

Q1: What year in Medical School are you in?
- M1
- M2
- M3
- M4
- LOA
- Dual Degree (specify below) (free text response)

Q2: Did you attend the University of Michigan for Undergrad?
- Yes
- No (where did you go?) (free text response)

Q3: Did you participate in MATCH (formerly known as AIM)/the Doc Is In program as a student-athlete at U of M or a similar pre-health prep program through your school's athletic department?
- Yes (at UofM)
- Yes (at another institution)
- No
- There was no program available like this at my school

Q4: What services / information do you wish you had as a pre-medical undergraduate student-athlete? (i.e. application timing, tutors, personal statement help, interview prep, connections to research/volunteer opportunities/shadowing, etc.)
- (free text response)

Q5: Did you take a gap year?
- Yes (how many?) (free text response)
- No

Q6: In Undergrad, I was happy with my access to _____. Select all that apply.
(extremely unhappy, somewhat unhappy, neither happy or unhappy, somewhat happy, extremely happy)
- Mentorship/advising services.
- Research opportunities
- Community service/volunteering
- Health professions shadowing
- Patient contact hours

Q7: What were some of the biggest barriers to engaging in typical pre-med activities while you were in undergrad? (Select all that apply to you.)
- Conflict with practices/competitions
- Conflict with school class schedule
- Complicated advising session scheduling tool
- Limited availability of advising session times
- Event schedule was not communicated/marketed effectively
- Low energy/fatigue after attending class and/or practice
- Other (free text response)

Q8: What unique challenges do you believe student-athletes face as they pursue a pre-health career?
- (free text response)