

ACADEMIC MEDICINE

Journal of the Association of American Medical Colleges

Uncomposed, edited manuscript published online ahead of print.

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DOI: 10.1097/ACM.0000000000002901

Academic Medicine

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Exploring the Socialization Experiences of Medical Students from Social Science and Humanities Backgrounds

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Supplemental digital content for this article is available at

<http://links.lww.com/ACADMED/A721>.

Acknowledgments: The authors wish to thank Hana Lee for her help with the administrative logistics for this study.

Funding/Support: None reported.

Other disclosures: None reported.

Ethical approval: This study was approved by the University of Toronto research ethics board on January 7, 2015.

Previous presentations: Findings were presented in part at the Canadian Conference on Medical Education annual meetings in Montreal, Quebec, Canada (April 16–19, 2016) and in Halifax, Nova Scotia, Canada (April 28–May 1, 2018).

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Abstract

Purpose

To explore the structural, cultural, and interpersonal issues that may contribute to the inadvertent marginalization of medical students with social sciences and humanities (SSH) backgrounds.

Method

Using the hidden curriculum as an analytic construct, the lead author interviewed 14 medical students with SSH backgrounds at the University of Toronto Faculty of Medicine from February to October 2015. The authors analyzed the interview transcripts for common themes around positive and negative cultural, structural, and interpersonal dimensions of the socialization process.

Results

Participants reported barriers to applying to medical school: needing to complete prerequisite courses and to do well on an exam geared toward those with a strong science background (the Medical College Admission Test) and lacking an application cohort. Some participants felt they were not ideal candidates for medical school. Participants appreciated how their SSH backgrounds and associated skill sets shaped both their perspective on patient care and their developing professional identities. However, they perceived that others largely deemed their previous training as irrelevant, and they felt marginalized in medical school by peers, instructors, and the curriculum. These experiences led both to self-censorship, which enabled them to seem to conform to normative behaviors, and to the pursuit of reaffirming elective experiences.

Conclusions

The existing hidden curriculum inadvertently marginalizes SSH medical students; their experiences likely reflect the socialization experiences of other students from underrepresented backgrounds. Curricular and institutional reform are imperative to shift the hidden curriculum toward one of epistemological inclusion that better supports students from nontraditional backgrounds.

After recent calls for increasing diversity in undergraduate medical education,^{1,2} U.S. and Canadian medical schools have widened their recruitment efforts to attract students from underrepresented and nontraditional backgrounds, including students with social science and humanities (SSH) premedical education.³ A number of sociopolitical issues are fueling this trend. For one, the perceived erosion of empathy in medical practice has been linked to an over commitment to bioscientific and technological dimensions of health care.^{4,5} There is also a growing appreciation that SSH training focused on the intersections of disadvantage and health inequities contributes to effective person-centered care, especially for patients from disadvantaged groups.^{5–13} Yet, institutional interest in disciplinary diversity is not always supported by a culture of inclusion. While medical students with SSH backgrounds complete medical training successfully, they often experience socialization challenges their peers do not.^{14–16} However, little is known about what the day-to-day experiences of medical students with SSH backgrounds contribute to their perceptions of inclusion. It is, therefore, critical to uncover elements of undergraduate medical training that may inadvertently affect the ability of students with SSH backgrounds to thrive, feel a sense of belonging, and contribute meaningfully to their classes.

In the last 50 years, premedical requirements,¹⁷ admissions processes,¹⁸ and undergraduate medical curricula¹⁹ have all emphasized the biomedical sciences as foundational preparation for the study and practice of medicine in a common “two-plus-two configuration”: two years of preclerkship during which students focus on building fundamental knowledge deemed necessary for the practice of medicine, followed by two years of clerkship. In response, the content, operationalization, and structure of the admissions process have historically favored students with science backgrounds.^{20–22} This traditional model for training has been challenged for several

important reasons,^{23–25} including its reductionistic approach to what counts as foundational knowledge for medical training.

This educational reductionism has had implications for health care delivery. Indeed, the erosion of learner empathy from the hidden curricular effects of biomedically focused curricula has been extensively documented.^{4,5} Some scholars have proposed that the inclusion of humanities and social sciences in medical education^{26–34} would mitigate this erosion of empathy and professionalism, reduce learner burnout,³⁵ and, overall, lead to better patient care. The same rationale has informed proposals for changes to premedical preparation and admissions processes. Studies of upstream effects have shown that medicine's emphasis on biomedical sciences has affected the socialization experiences of premedical students, led to burnout and encouraged maladaptive learning behaviors that make students vulnerable to a loss of empathy well before admission to medical school.³⁶

Calls for increased diversity and inclusion in medical schools suggest an evolution of institutional priorities in U.S. and Canadian medical schools.^{1,2,37} Some consider the reform of the Medical College Admission Test (MCAT) to include social and psychological sciences to be an encouraging step toward attracting students with SSH backgrounds to medicine. However, the test is still dominated by basic science content.^{14,38–42} Some schools have eliminated course requirements from their application process altogether as a way to attract well-rounded matriculants but have retained the MCAT exam as an implicit biomedical sciences prerequisite.^{43,44} Other schools have created different admissions streams for early acceptance of SSH students as seen at the former Humanities and Medicine Assurance Program (HuMed)—since expanded to FlexMed²¹—program at the Icahn School of Medicine at Mount Sinai (formerly the Mount Sinai School of Medicine).^{16,45}

Despite these early efforts to attract SSH applicants to medicine, medical schools have had mixed results with integrating students with SSH backgrounds. Hall et al. found that SSH medical students performed similarly to their non-SSH peers in academics, clerkships, and residency selection but demonstrated different patterns of competencies from those of their non-SSH peers.¹⁴ Ellaway et al. also studied SSH medical students, noting that science and nonscience students had different personal experiences, approaches to studying, stress levels, and examination results.¹⁵ SSH medical students reported feeling more challenged but also more positive compared with their non-SSH peers, preferring to discuss issues and showing a preference for psychiatry early on in medical school.^{46,47} Notably, rates of nonscholarly leaves of absence and attrition rates were higher for SSH medical students in admissions tracks like the HuMed program.^{16,48}

Given the efforts described above to increase SSH perspectives in medicine, why are students with SSH backgrounds facing challenges in medical schools? We set out to understand the structural, cultural, and interpersonal issues that may contribute to the inadvertent marginalization of medical students with SSH educational backgrounds. We used the hidden curriculum (HC) as a theoretical starting point to explore how and to what degree structural and cultural elements of the curriculum socialize students. Our goal was to gauge to what extent students with SSH backgrounds succeed in integrating SSH perspectives into their learning and, by extension, how comfortable these students felt sharing that part of their expertise with faculty and peers. We aimed to identify ways in which students were supported in or dissuaded from incorporating their social science background into their evolving identity as health care providers. With the results of this study we hope to contribute to ongoing educational efforts in

the U.S. and Canada to create inclusive curricula and learning experiences that lead to the development of caring and competent physicians.

Method

Theoretical framing

The concept of the HC has long been used in medical education research to analyze aspects of the socialization of students into medical practice.^{49–54} It is defined as a “set of influences that function at the level of organizational structure and culture”⁵⁵ that exist outside an institution’s formal curriculum, that is, the espoused knowledge that an institution tries to transmit to students through formal learning. Hidden curricular effects in a medical school are an inescapable part of learning and socialization. They range from tacit lessons learned from supervisors, lecturers, and peers, to cultural influences such as institutional messaging related to values and expectations as to what is relevant and useful knowledge.⁵

Sampling

We explored the socialization of students with SSH backgrounds at the University of Toronto Medical School reasoning that the overarching curricular goals at the University of Toronto are similar to those of most U.S. and Canadian medical schools. The University of Toronto medical school curriculum is based on the national competency framework CanMEDs, which is similar to the competency requirements of the Accreditation Council for Graduate Medical Education. At the time of this study, the University of Toronto used the model of two years of basic science and two years of common clinical training. The Office of Admissions at the University of Toronto contacted all first-year through fourth-year students who had a bachelor of arts, master of arts, or bachelor of arts and sciences and asked them to consider participating in the study. Thirty-nine students out of 1,036 students met our inclusion criteria. Students interested in taking part in the

study (n = 15) contacted the lead author (J.T.H.L.) via email and, of those, 14 agreed to participate in the study. We contacted and then interviewed participants between February and October, 2015, at locations convenient to them. We hypothesized that this sampling method would allow us to reach a representative sample.⁵⁶ In terms of information power, our sample supported the specific aim of our study. All study participants shared some characteristics, such as their learning environment and their belief in the importance of their SSH background to their practice as future physicians. Fourteen constitutes a large sample size out of the 39 eligible participants. The representativeness of our sample was also confirmed after analysis of the data and the emergence of similar participant experiences.⁵⁶

Data collection

We used a semistructured interview format because it allowed us to broadly explore the socialization experiences of participants and to focus the conversation specifically on HC effects (positive and negative). The lead author (J.T.H.L.), who has experience conducting qualitative interviews, interviewed the study participants. He used conversational language to ask participants, for example, about their perceptions of the ideal applicant to the University of Toronto to assess institutional values transmitted via the admissions experience. He asked broadly about tensions, surprises, and unexpected aspects of medical school training to explore institutional culture and interpersonal dynamics affecting participant socialization. Using the interview script as a guide, he modified questions to follow conversational flow and to ensure he could probe any new and unexpected information relevant to the study. Each interview lasted between one and two hours. (See Supplemental Digital Appendix 1 for the interview guide at <http://links.lww.com/ACADMED/A721>.)

Analysis

Interviews were transcribed and coded in NVivo 11 for Mac (QSR International Pty Ltd., Melbourne, Australia) by using the concept of the HC as an analytical framework to look for potential positive and negative effects of tacit influences (see Table 1 for representative quotes for identified themes). We used two-tiered coding for the dataset. One author (J.L.) first coded all the transcripts, using the tenets of the HC to look for evidence of cultural, structural, or interpersonal dimensions of socialization. For example, if a student mentioned being influenced by peer attitudes or opinions when making decisions about what to study (e.g., a colleague told one participant to skip the Determinants of Community Health course), those decisions were coded as examples of HC effects pertaining to what counts as relevant material to learn, stemming from peer pressure. Coauthors (M.D.H. and M.A.M.) coded subsets of the data. After we discussed and agreed on the codes, one author (J.L.) recoded all transcripts to ensure consistency and conducted a second-level coding to identify any other relevant themes related to socialization that might not apply to the HC directly. We discussed findings from this phase of the analysis until we had achieved a consolidation of findings. During this stage of coding, we captured evidence of how students performed their identity as scholars, including decisions to self-censor their SSH training. We assessed thematic saturation by looking at the relevance of the SSH students' experience across the entire dataset. The University of Toronto research ethics board approved the study.

Results

The findings reported in this paper reflect overarching trends in the socialization of SSH medical students at the University of Toronto.

Demographics

The 14 participants constituted more than a third of the SSH medical students enrolled at the University of Toronto at the time of the study. Three participants had exclusively studied SSH for their undergraduate degrees, and four participants had completed SSH graduate degrees before entering medicine (see Table 2). The rest had taken a mix of science and SSH courses before entering medical school. All participants self-identified their SSH educational background as an important factor in their experience of medical school. Only three participants were in their clerkship years of medical education at the time of the interviews.

Admissions process

Several participants indicated being motivated to apply to medicine because of their SSH background. They saw medicine as an opportunity to interact with others and to have a greater impact in society compared with what they could do in a career in an SSH field. Multiple participants reported barriers to applying to medical school (see Box 1 for admissions requirements), which they considered applied to them specifically as matriculants from nontraditional backgrounds: They noted the need to complete prerequisite courses, the difficulties of the MCAT exam for nonscience students, and not having a supportive cohort with shared experiences.

None of the participants identified as an “ideal candidate” for medical school, which they perceived to be someone with a high grade point average and a high score on the MCAT exam, a basic science undergraduate or graduate degree, and publications in prestigious journals.

I did not fit in that role. To be honest, I’m still very surprised to have gotten in.

Impostor syndrome. . .doesn’t end. UofT [the University of Toronto] has a reputation of really, really liking research. (Participant 14)

Despite these challenges, some participants indicated that their SSH background was a positive “differentiating factor” (Participant 10) during interviews.

Experiences during medical school

Interpersonal devaluing of SSH knowledge. Some participants contrasted the positive messages they received during the admissions process about their educational preparation, sometimes directly from medical school leaders, with the perceived devaluing of SSH topics once at medical schools by their peers and instructors:

And I’ve been told over and over again by deans of medicine at UofT, “Oh, your program is wonderful. It’s going to serve you so well in the long run; you’re so lucky to have a humanities background,” but it’s really hard to see that right now when it just feels like a disadvantage. (Participant 13)

Most participants reported frustration about what they perceived as their colleagues’ view that the medical school’s social determinants of health course (Determinants of Community Health/Community, Population, and Public Health) was not important. Many participants also reported that tutors would often neglect SSH topics in problem-based learning and clinical teaching in favor of biomedical topics. Participants perceived these experiences as a devaluing of all SSH knowledge with respect to patient care.

I feel the first things that get cut, when things get cut, are those things [SSH topics]. Even very simply in PBL [Problem Based Learning], there are always psychosocial objectives. What are the first things that are not as important? It’s the psychosocial objectives. (Participant 7)

Participants described how advocating for critical perspectives or applying social science lenses in their interactions with peers and faculty was often met with dismissiveness. They concluded from these experiences that medical school tutors associated intelligence with a background in biological sciences.

I said, “I think that critical theory is really important. I think we need to be critical of where our mandates are coming from and who’s teaching us and the language that they use,” and my colleague said, “I don’t really believe in this stuff anyways.” And that was it.... It makes me feel like the stuff that I’m interested in isn’t valued. (Participant 4)

Such experiences established a hierarchy of knowledge that placed biomedicine at the apex, as a set of essential timeless truth about the care of patients⁵⁷ and devalued alternate perspectives that the formal curriculum (admissions process and course learning objectives) actively promoted as important in contemporary medical training. The pervasive jargon, such as “hard” or “soft” science, that faculty and peers used further reinforced this hierarchy and contributed to participants’ perceptions that their SSH backgrounds were marginal to the practice of medicine:

If you’ve done a wet lab masters or a wet lab PhD, this is how intelligent you are. If you’ve done an MA or a BA or a PhD in something that’s “soft,” you’re not. And even in the research world, in truth, my wet lab research is more valued by people than my qualitative research, you know. (Participant 5)

We also found structural reinforcement of participants’ perceptions that SSH knowledge and skills were marginal factors in medical competence.

Structural marginalization of SSH topics. Beyond interpersonal interactions with their peers and educators, the majority of study participants noticed ways in which the curricular structure

avored those with backgrounds in biological sciences (i.e., through unfavorable scheduling of SSH courses and topics, labeling of learning as mandatory or elective, assessment approaches, etc.). They also noted that SSH topics and skill sets were unintentionally relegated to the periphery of the medical school curriculum; for example, SSH topics were sometimes addressed outside of the classroom or classes with SSH content were offered infrequently or at inconvenient times

Participants noticed that SSH-related forums (i.e., any space in which SSH topics are discussed, from formal lectures to optional classes to student events) were excluded from the mandatory curriculum (see Chart 1), and these topics were allotted unfavorable class times and infrequently appeared on examinations. Most importantly, they found that the organization of the curriculum inadvertently benefited students who had a basic science background, thus setting students with SSH training at a perceived disadvantage and, early on, leading these students to perceive themselves as inadequate compared with their peers.

...first of all, not knowing how to learn the [biomedical] material...[or] approach lectures when I study, when everybody else seemed to have this good system of how to learn the material.... You go to a small group, and they're spewing out these words, and you've never heard them before, and, especially at the beginning when the impostor syndrome is still very, very, very strong...feeling like I know that I'm not a science student. (Participant 11)

The emphasis on sciences was so prevalent that even participants who had taken some science courses before medical school felt at a disadvantage compared with their peers with more premedical courses in the so-called "hard" sciences.

How the HC affected socialization: Response to devalued backgrounds

Realizing that their SSH backgrounds were not only devalued by their peers and educators, but also inadvertently sidelined by the undergraduate medical curriculum's structure, our participants reported several coping strategies. One such strategy, self-censorship, had a clear impact on how students performed their learning gains. All participants noted that they avoided sharing perspectives that they had come to understand peers and supervisors would dismiss. In addition, as an expression of their desire to preserve what they perceived to be valuable skills, they purposefully sought out extracurricular opportunities to engage in SSH activities. Both of these strategies, described in more detail below, affected how each participant learned to perform his or her identity as a successful medical student.

Self-censorship. Some participants with less premedical biomedical training reported asking fewer questions in the classroom after getting negative feedback about their questions, which were influenced by their SSH backgrounds. Such feedback from peers and instructors included comments that participants' questions were "dumb," "irrelevant," or a "waste of time" for their expected level of training. Some described this self-censoring behavior as a strategy for personal image management. Participants deliberately avoided situations in which peers and preceptors would have the opportunity to perceive their questions, interests, or identities as nonconventional or nonlegitimate. Engaging in self-censorship made participants more aware of moments when their previous background and training set them apart from their peers.

Having experienced this negative feedback from peers and faculty, participants would sometimes reserve their SSH-related observations and thoughts for “safe” communities outside of medicine.

Not that I’m not being myself, but rather that there’s a part of me that I can share in these situations and there’s a part of me that I don’t...but I feel like a big part of me doesn’t come with me to medical school. (Participant 11)

Participants described this management of a personal and a professional identity—“front” and “back” stage behaviors⁵⁸—as holding back aspects of themselves. Some participants reported they had to show enjoyment of basic science or displeasure with SSH aspects of the curriculum (such as the Determinants of Community Health course) to be accepted and be seen to fit in. In this way, they would be perceived to be mainstream in their medical school class, all the while keeping some of their less-mainstream tendencies hidden safely away.

Despite the challenges participants experienced when trying to apply or share their SSH interests and skill sets in medical school, all participants continued to consider their SSH training as integral to their professional identity. They felt their SSH training gave them specific, unique attributes compared with their classmates and, thus, their SSH background was worth preserving in their training and future medical practice. For example, participants described how they valued the critical thinking skills they had developed while studying SSH because they found they could approach a medical problem from an “outsider perspective.” This perspective enabled them to recognize problematic normative practices and/or behaviors they perceived were inadvertently interfering with the espoused forms of care they were being trained to provide via the medical school curriculum.

I feel that I have a broader understanding of people in general, compared to my classmates, based on anthropology and the social determinants of health, and I can often bring that to the table [with my patients] in a discussion where people don't necessarily think about it. (Participant 2)

Participants were aware that their SSH background gave them a unique vantage point for understanding their role in a broader system of care. This perspective, combined with clear indicators in the formal curriculum that SSH matter in the care of patients (i.e., during admissions, in listed learning objectives, etc.), reinforced their need to resist conforming to the cultural norm.

Resisting socialization. Participants noted a recurring identity conflict. They had clarity in how their SSH backgrounds informed the kind of doctor they wanted to be and perceived that this image of a “good” doctor was inadvertently threatened culturally, interpersonally, and structurally in their day-to-day training. Being attuned to these effects, participants recalled reasons for and instances of consciously resisting the socialization process of medicine that threatened the identities they brought to medical school through the devaluing of their SSH backgrounds.

I felt I started losing myself and losing who I had become over the years: that person that is questioning, critically thinking, and connecting things together and so forth. That's why I had to fight against that. I still feel I have to fight against that, so I don't lose that. (Participant 7)

Participants reported various strategies for subverting the socializing force of medical school. They spent time with friends outside of medicine and made deliberate choices about enhancing their learning by pursuing extracurricular SSH experiences rather than passively accepting the materials offered to them as inherently central to their training.

We have to reach outside of the curriculum to find that nourishment.... I think it's great that the health, arts, and humanities program exists because I don't know what I would have done [without it].... Going to these events, talking to people, it makes me so happy, and I think we need to see more it [arts and humanities] within courses. (Participant 7)

In other words, participants found ways that they could be themselves on a small piece of the “front” stage⁵⁸ of medical school where they could act on, discuss, and pursue their otherwise unexpressed interests and ideas. However, while most participants sought out such extracurricular opportunities, some participants reported feeling pressure from peers and faculty to not waste their time attending such events. Resisting such contradictory messages took effort.

And I think I realized that it would be so easy to not engage in that [humanities program] or to think that it's not worthwhile. I could fall prey to that [thinking negatively about SSH], too. So that was a pretty sad realization for me.

(Participant 11)

Participants nevertheless tried very hard to preserve their SSH identities while negotiating the external pressures of the largely biomedical learning environment.

Discussion

Our study delved into the socialization of medical students from SSH backgrounds at a Canadian medical school with a curricular approach that is typical for medical training. We explored the participants' professional identity negotiations, making visible in the process how students resolve conflict between personal and professional values stemming from HC effects. Our results show that while SSH medical students value their disciplinary backgrounds and their associated skill sets, their SSH perspectives were marginalized interpersonally, culturally, and structurally in medical school. This devaluing led them both to self-censor so they could appear to be adhering to normative behaviors and ideas and to seek reaffirming experiences outside of the formal curriculum. This finding provides nuance to what might otherwise be considered totalizing negative HC effects.⁴ Our study participants felt they had room and agency to preserve the elements of self they felt would be important in the care of their future patients. In part, this attitude might be due to the positive HC effects participants experienced, such as inclusive admissions processes, the espoused learning objectives of the formal curriculum, and the capacity to hone their SSH perspectives and skills in sanctioned elective courses and extracurricular activities.

To our knowledge, while many studies have examined the professionalization and socialization experiences of medical students and residents in general through the lens of the HC,^{59–63} this is the first study to delve in detail into the socialization experiences specifically of medical students with SSH educational backgrounds. As mentioned above, the inclusion of social and psychological sciences in the most recent iteration of the MCAT exam formally acknowledges the perceived utility of skills nurtured by an SSH educational background. It is important to note, however, that our study participants took an earlier version of the MCAT examination. The

experiences of SSH medical students at the University of Toronto show that the culture of this medical school has yet to reflect, in practice, evolving institutional priorities. This lag is likely typical of other traditional medical schools across Canada and in the United States, as cultural shifts do not happen simultaneously with structural reforms. As a result, medical students with SSH backgrounds experience and struggle with a “tabula rasa” effect in medical school. The supposed capital of their educational background transforms from an asset during the application process to a burden as they progress through medical school. During medical school, they experience medical training as a “neutralization” of the unique skill sets and knowledge they possess as a result of their nontraditional educational backgrounds.⁶³ In fact, participants reported these forces of erasure⁵⁷ manifested themselves in various ways. They perceived ideas of an “ideal candidate” when applying for the University of Toronto medical school, and these perceptions were later reinforced when participants interacted with their medical school peers and supervisors. They also reported explicit and implicit prioritization of basic science and clinical knowledge and the dismissal of SSH content and epistemologies. Furthermore, participants responded to these HC effects by performing different professional identities in different contexts, resulting in self-censoring of their SSH interests and behaviors in front of their peers.

Thus, despite an increased interest in incorporating elements of SSH into medical school,^{26–28,35,59,64–66} our participants experienced their medical training as inadvertently undermining their SSH knowledge and skills. Although we recognize that many challenges SSH medical students face may be common to medical students from biomedical backgrounds, study participants self-identified their educational background as a specific factor through which they experienced exclusion in medical school. Additionally, our study participants’ perception of biomedical

dominance in the curriculum may have been particularly acute because they were mainly preclinical students. Because the traditional approach to training consists of two years of basic science followed by two years of clinical training, at the time of this study, most participants had only experienced the basic science. Future studies should explore the experiences of clinical medical students and residents as well as preclinical students at other medical schools. Further, the socialization tensions described by SSH medical students, who constitute a minority group, may also reflect the socialization experiences of medical students from other underrepresented backgrounds in medicine, be it academic (for example, chemistry, engineering, or physics), religious, socioeconomic, or racial/ethnic; the latter two have been a recent focus of medical education literature and admissions processes.^{67–76}

Therefore, our findings are relevant beyond just providing medical schools with insight on how they might better support SSH medical students. How the hierarchy of relevance of applicants' educational backgrounds is established may have implications for students from other underrepresented backgrounds. Further, the goal may not be necessarily to eliminate all tension because the benefits of a diverse learning environment may be rooted in working through these differences; this area also needs future study.⁷⁷

In 2016, the University of Toronto restructured the preclerkship and gave these two years of study a new name, the Foundations Curriculum. This new curriculum promises to better integrate SSH topics into the medical curriculum. In this way, structural changes have targeted HC effects related to an overdominance of basic science content.⁷⁸ Specifically, the renewal effort in preclerkship deliberately integrates all forms of knowledge underpinning clinical practice and aligns design, implementation, and assessment. This reform supplements changes already made to improve inclusion in admissions, such as adding streams for underrepresented groups in

medicine. Therefore, the observations made by our participants constitute data for what might be prioritized for improvement at an institutional level. The positive and negative HC experiences of SSH students described in this paper offer insight into important areas for exploration in the assessment of the impact of the curriculum and admissions process renewal at the University of Toronto. Participants' experiences also serve as a starting point for other institutions as they consider how to integrate SSH knowledge in their curricula and support the learning of students from diverse educational backgrounds.

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Table 1

Representative Quotations From Participants Illustrating Themes Related to the Socialization Process of Students With a Social Science and Humanities Background, 2015^a

Theme	Quotations
Motivations for application to medical school (Participants reported motivations for applying to medical school.)	<ul style="list-style-type: none"> • I feel like it would be so frustrating to be producing this work [in the SSH fields] that you think is really important but isn't widespread. (Participant 8) • ...so I thought that medicine might be a great chance to interact with people on a daily basis, instead of being in an office, and have meaningful interactions and be a meaningful career. (Participant 3) • I hated that my contribution was limited to this insular kind of intellectual masturbation topic that had no consequence.... Even if I was doing philosophy, which, you could say is a little bit more relevant to today, five people would read my paper, even if it was published. (Participant 6)
Barriers to application (Participants reported barriers to applying to medical school.)	<ul style="list-style-type: none"> • I applied [to medical school] for three more years.... I ended up enrolling in correspondence classes for two years.... I was working at Starbucks part-time and then doing my classes on the side...but because I didn't come in with a cohort I was applying on my own. (Participant 4) • I had a full-time job at the time, getting off work at 5 and then going to Robarts [library] and studying [for the MCAT exam] in the evening and on the weekends, so that was tough. (Participant 3)
SSH background as a positive factor in application process (Participants described how their SSH background was a positive differentiating factor in medical school applications.)	<ul style="list-style-type: none"> • So actually, during the interview process, it was really interesting because the impression I got from the interviewer was that they really appreciated my humanities background. So, I interviewed at both Queens [Queens University] and UofT [University of Toronto], and at both places, I felt I was really able to showcase that [my background] and that made me a unique applicant. (Participant 1) • I thought I was very well rounded, and I would make a good addition because I had done philosophy. I was coming from a very different perspective, so I thought I would be a good addition. (Participant 7)
Ideal candidate for University of Toronto Medical School (Participants described their impressions of what	<ul style="list-style-type: none"> • I wasn't the ideal, in sort of the rumoured ideal candidate of a 4.0 GPA and a 39 or 40 MCAT [score], whatever the max is, with stellar publications in Nature, Science, Cell, all these top science [journals]. (Participant 5)

constituted an ideal candidate, i.e., someone with a high GPA and MCAT test score, a basic science undergraduate or graduate degree, and publications in prestigious journals.)	<ul style="list-style-type: none"> I didn't have like a whole huge background in pharmacology, in microbiology, and all this stuff, so I don't feel like I fit into...the perfect applicant role either, and I didn't have a 4.0 and I didn't have a 45T, and I didn't...have any publications or...I didn't actually volunteer in a hospital either so I don't feel like I fit. (Participant 2)
Interpersonal devaluing of SSH knowledge (Participants described how their peers and instructors inadvertently devalued SSH topics in both premedical and medical education.)	<ul style="list-style-type: none"> [I don't bring up] the topic of my research project in nutrition for sure. That's not something I bring up on purpose...because it falls into the complementary and alternative medicine category, which people have, especially doctors, not always the best opinion of. (Participant 12) But I've had some experiences so far in which that initial dread has come true of the humanities being pushed under the table, as not being as relevant or as important as the sciences. (Participant 1) So I started with a level of interest in CPPH [Community, Population, and Public Health, a course on the social determinants of health] and those kinds of issues, and I got frustrated with the course.... So, it was disappointing...: first of all, that people didn't have an intrinsic interest in learning about those kinds of things, which, you can know all the science there is to know, but if you can't connect to your patient, then you're just done for. (Participant 11) There's a bit more value by my peers placed on numbers and wet lab and mice and <i>Drosophila melanogaster</i> [a species of fly] than there is on a patient or me talking to someone in a qualitative sense. So you could be the most phenomenal qualitative researcher, but it's [bogus] research. And that's what I've gotten all the time—stuff that I've been very passionate about that's been deemed as [bogus] by my peers. (Participant 5)
Structural relegation of SSH topics to periphery in curriculum (Participants described how the medical school curriculum favored those with backgrounds in biological sciences and unintentionally relegated SSH topics and skill sets to the periphery.)	<ul style="list-style-type: none"> How they [medical school faculty] treat humanities, ethics, and professionalism in the curriculum, as something that they say is important, but I think in the actual manifestation of the curriculum, it does not end up becoming that important to students who are thinking about tests and evaluations...not having any graded component like that for these [SSH] subjects, and having everything that's being graded and evaluated based on science knowledge. (Participant 9)

- I think it just can't compete with the anatomy and MMMD [Mechanisms, Manifestations, and Management of Disease] curriculum when that curriculum is so dense and requires us to do so much memorization.... It's difficult for [SSH curricular content] to compete against the science curriculum. (Participant 3)
- It's that culture of not appreciating humanities, and that approach to thinking—[SSH seen as] soft skills.... It makes me feel that the humanities are devalued, that [they're] a peripheral thing...even the fact that [they're] sidelined in our curriculum, that the only method we have to explore the humanities is through our [extracurricular] student blog; [they're] downplayed within our medical education. (Participant 1)
- I felt that if clinical skills, DOCH [Determinants of Community Health] our social determinants of health course] and our other courses were weighted the same, then I would have been at an advantage for DOCH and ASCM [Art and Science of Clinical Medicine, the clinical skills course], but since those tended to be a little bit smaller in importance, I felt that I was fairly disadvantaged. (Participant 2)

Self-censorship
(Participants recounted experiencing negative feedback from their peers and supervisors about their SSH perspectives, which led them to self-censor their SSH-related thoughts and questions.)

- I find it tough to ask questions sometimes because I just feel I don't have the context, the background, or the understanding. I already feel dumb. I don't want to look publicly dumb too. (Participant 7)
- I would usually share a lot more.... I was very open about sharing things at the start.... People around me don't have the same educational background in the humanities, so they might not be well equipped to appreciate it. (Participant 1)
- People have certain expectations of me because they think I've learned certain things in philosophy.... People [say], "Oh, you must really like ethics, or you must really enjoy the social determinants." Then sometimes I [say], "Oh, sure," because I don't want to take the time to explain that's not what I studied. (Participant 8)
- I am more reluctant to share now than I used to be because I fear how other people are going to perceive me as the talker or as the person with the strange ideas.... So I've stopped asking questions in class because of that. (Participant 13)

Preserving valued qualities (Participants reported wanting to preserve skills and qualities derived from their SSH backgrounds in their training and future medical practice.)

- Being in clinics and seeing things from the eyes of a sociologist—those were some of my most profound experiences. (Participant 5)
- It makes me worried that I'm going to be falling into some professional identity that will ultimately be the kind of doctor that I wouldn't want to have had when I was sick, and it also kind of makes me sad. (Participant 6)
- I want to become a physician who is driven by humanities.... I want my career in medicine to be focused on the human, the patient as human. So that means being compassionate. That means being empathetic. That means staying grounded. That means being patient centred but also partnering with patients. (Participant 14)
- So, I think that I have these amazing skills that I was lucky enough to develop [as an] undergrad, that I get to carry on and...never in a million years would I trade that for the knowledge that a science student had coming into med school. (Participant 11)

Seeking extracurricular activities and communities (Participants described deliberate educational choices related to enhancing their learning by pursuing extracurricular SSH experiences.)

- I was lucky in the sense that I had a lot of undergrad friends still around the area that I could always periodically go and see and talk about not medicine with. But I think, otherwise, it would have been hard to just talk medicine and not have any options to talk not medicine. (Participant 10)
- I don't have that many friends in medical school, to be honest, so.... [A] lot of my friends from undergrad happen to live in the city, so I hang out with them a lot. (Participant 9)
- [H]umanities in medicine is a relatively new thing, so introducing it is going to take some time.... The only method we have to explore the humanities is through our student blog. (Participant 1)
- Every extracurricular thing I do is arts and humanities. Literally everything. My CV reads like she happens to be in medical school but everything else is just arts and humanities, and it's really just because I need that balance. (Participant 14)

Abbreviations: SSH indicates social sciences and humanities; MCAT, Medical College Admission Test; GPA indicates grade point average.

^aParticipants were 14 medical students with SSH backgrounds enrolled at the University of Toronto Faculty of Medicine, Toronto, Ontario, Canada, who were interviewed in 2015.

Table 2**Educational Background of Study Participants (N = 14), 2015^a**

Degree	No.	Degree concentration
Bachelor of arts and sciences	6	Anthropology Global health History Philosophy Political science Religion
Bachelor of arts	4	Anthropology English Philosophy Psychology
Master of arts	4	Anthropology History and philosophy of science Philosophy Sociology

^aParticipants were medical students with social sciences and humanities backgrounds enrolled at the University of Toronto Faculty of Medicine, Toronto, Ontario, Canada.

Chart 1

University of Toronto Undergraduate Medical Education Curriculum (until August 2016)

Curricular content	Extracurricular offerings
First year Structure and Function (Sept. to Dec.) Metabolism and Nutrition (Jan. to March) Brain and Behavior (March to June) Determinants of Community Health (Sept. to June) Art and Science of Clinical Examination (Sept. to June)	Certificate Programs <ul style="list-style-type: none"> • Leadership in Medicine • Global Health • Indigenous Health • LGBTQ Health • Multiculturalism in Medicine • Health, Arts, Humanities • Narrative Medicine • Student as Teachers Program Volunteer Groups <ul style="list-style-type: none"> • Mentorship (e.g., Saturday Program) • Patient Care (e.g., IMAGINE Clinic) • Advocacy Groups (e.g., Medical Students for Refugee Care) Performance & Arts <ul style="list-style-type: none"> • Looking Through Art (Art Gallery) • ArtBeat—Medical Humanities Blog • Daffydil: The Musical • Orbital Groove Medical Student Band • Healing Tonics Medical Student Choir
Second year Mechanisms, Manifestations, and Management of Disease (Sept. to June)	
Third year Transition to Clerkship (Aug. to Sept.) Clerkship (Sept. to Aug.) Portfolio courses (Sept. to Aug.)	
Fourth year Electives (Sept. to Dec.) Transition to Residency (Jan.) CaRMS tour (Jan. to Feb.) Selectives (Feb. to March) Fusion Weeks (March to May)	

Abbreviations: IMAGINE indicates interprofessional medical and allied groups for improving neighborhood environments and is an interprofessional student-run clinic for underserved and homeless populations at the University of Toronto; CaRMS, the Canadian Residency Match Services, a nonprofit organization that arranges each year's residency and subspecialty match process.

Box 1

Admissions Requirements for University of Toronto Faculty of Medicine (until August 2016)^a

Degree requirements

- If applying from a Canadian university: minimum three years (or, 15 full course equivalents [FCEs]) in a direct-entry university program
- If applying from a non-Canadian university: an equivalent of a four-year direct-entry undergraduate program at the university level
- Prerequisites: two FCEs of life sciences and one FCE of humanities, social science, and/or languages
- GPA: minimum 3.6 on a 4.0 Ontario Medical School Application Services scale for undergraduate applicants and 3.0 for graduate applicants
- MCAT: minimum score of 9 in each of the three sections—biological science, physical science, and verbal reasoning. University of Toronto did not require the writing sample score at the time of this study.

Nonacademic requirements

- For entry in fall 2012: one personal statement, detailed autobiographical sketch, and three letters of reference
- For entry in fall 2013, 2014: detailed autobiographical sketch with three statements, three brief personal essays, and three letters of reference

Abbreviations: GPA indicates grade point average; MCAT, Medical College Admissions Test.

^aAdapted from 79.