



Exploring the experiences of Canadian medical students with a background in the arts and humanities

Vécu des étudiants en médecine canadiens ayant une formation en arts et sciences humaines

Khadija Ahmed, Arjun Patel and Lorelei Lingard

Volume 15, Number 1, 2024

URI: <https://id.erudit.org/iderudit/1110446ar>
DOI: <https://doi.org/10.36834/cmej.77005>

[See table of contents](#)

Publisher(s)

Canadian Medical Education Journal

ISSN

1923-1202 (digital)

[Explore this journal](#)

Cite this article

Ahmed, K., Patel, A. & Lingard, L. (2024). Exploring the experiences of Canadian medical students with a background in the arts and humanities. *Canadian Medical Education Journal / Revue canadienne de l'éducation médicale*, 15(1), 6–14. <https://doi.org/10.36834/cmej.77005>

Article abstract

Background: Arts and Humanities (A/H) training is a powerful strategy to help medical students develop key competencies which align with the CanMEDS roles that Canadian physicians are expected to embody. Students with backgrounds in A/H may enter medical school with the skills and dispositions that A/H training provides. This paper explores the varied experiences of medical students with prior A/H backgrounds, with an emphasis on how they navigate relationships with their student cohorts and participate in undergraduate medical training environments.

Methods: Descriptive qualitative research methodology was used to conduct and analyze semi-structured interviews exploring the perspectives of Canadian medical students with either a A/H degree or training in A/H (n = 13). Domains such as identity, integration of interests, and challenges in maintaining A/H interests during medical training were explored.

Results: Participants described their A/H identity as intertwined with their identity as medical trainees and described their sense of interconnection between the disciplines. Challenges included imposter syndrome and difficulties in relating with peers from science backgrounds. Participants described returning to their A/H interests as a tool for wellness amidst medical training.

Conclusions: Medical students with a background in A/H training describe this background as offering both affordances and challenges for their sense of identity, belonging, and wellness. These students offer an untapped resource: they come with dispositions of value to medicine, and they perceive a positive, hidden A/H curriculum that supports their maintenance of these dispositions during training. Understanding more about these hidden treasures could help foster the development of well-rounded and humanistic physicians in the entire medical class.

© Khadija Ahmed, Arjun Patel, Lorelei Lingard, 2023



This document is protected by copyright law. Use of the services of Érudit (including reproduction) is subject to its terms and conditions, which can be viewed online.

<https://apropos.erudit.org/en/users/policy-on-use/>

érudit

This article is disseminated and preserved by Érudit.

Érudit is a non-profit inter-university consortium of the Université de Montréal, Université Laval, and the Université du Québec à Montréal. Its mission is to promote and disseminate research.

<https://www.erudit.org/en/>

Exploring the experiences of Canadian medical students with a background in the arts and humanities

Vécu des étudiants en médecine canadiens ayant une formation en arts et sciences humaines

Khadija Ahmed,¹ Arjun Patel,¹ Lorelei Lingard²

¹Undergraduate Medical Education, Schulich School of Medicine & Dentistry, Western University, Ontario, Canada; ²Department of Medicine, CERI, Schulich School of Medicine & Dentistry, Western University, Ontario, Canada

Correspondence to: Dr. Lorelei Lingard, Schulich School of Medicine & Dentistry, Health Sciences Addition, Western University, London, Ontario, Canada; email: lorelei.lingard@schulich.uwo.ca.

Published ahead of issue: Oct 5, 2023; published: Feb 29, 2024. CMEJ 2024, 15(1) Available at <https://doi.org/10.36834/cmej.77005>

© 2024 Ahmed, Patel, Lingard; licensee Synergies Partners. This is an Open Journal Systems article distributed under the terms of the Creative Commons Attribution License. (<https://creativecommons.org/licenses/by-nc-nd/4.0>) which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is cited.

Abstract

Background: Arts and Humanities (A/H) training is a powerful strategy to help medical students develop key competencies which align with the CanMEDS roles that Canadian physicians are expected to embody. Students with backgrounds in A/H may enter medical school with the skills and dispositions that A/H training provides. This paper explores the varied experiences of medical students with prior A/H backgrounds, with an emphasis on how they navigate relationships with their student cohorts and participate in undergraduate medical training environments.

Methods: Descriptive qualitative research methodology was used to conduct and analyze semi-structured interviews exploring the perspectives of Canadian medical students with either a A/H degree or training in A/H ($n = 13$). Domains such as identity, integration of interests, and challenges in maintaining A/H interests during medical training were explored.

Results: Participants described their A/H identity as intertwined with their identity as medical trainees and described their sense of interconnection between the disciplines. Challenges included imposter syndrome and difficulties in relating with peers from science backgrounds. Participants described returning to their A/H interests as a tool for wellness amidst medical training.

Conclusions: Medical students with a background in A/H training describe this background as offering both affordances and challenges for their sense of identity, belonging, and wellness. These students offer an untapped resource: they come with dispositions of value to medicine, and they perceive a positive, hidden A/H curriculum that supports their maintenance of these dispositions during training. Understanding more about these hidden treasures could help foster the development of well-rounded and humanistic physicians in the entire medical class.

Résumé

Contexte : Une formation en arts et sciences humaines (A/SH) est une stratégie efficace pour aider les étudiants en médecine à développer des compétences clés qui s'harmonisent aux rôles CanMEDS que les médecins canadiens sont censés incarner. Les étudiants ayant un bagage en A/SH peuvent entrer à la faculté de médecine dotés des compétences et des dispositions qu'une formation en A/SH apporte. Cet article explore les expériences diverses vécues par des étudiants en médecine ayant déjà un bagage en A/SH, en mettant l'accent sur la façon dont ils entretiennent des relations au sein de leurs cohortes d'étudiants et s'intègrent dans des contextes de formation médicale de premier cycle.

Méthodes : Une méthodologie de recherche qualitative descriptive a été utilisée pour mener et analyser des entretiens semi-structurés explorant les points de vue d'étudiants en médecine canadiens ayant soit un diplôme en A/SH ou une formation en A/SH ($n=13$). Des domaines tels que l'identité, la conciliation des champs d'intérêt et les défis liés au maintien de ceux liés aux A/SH pendant la formation médicale ont été explorés.

Résultats : Les participants ont décrit leur identité A/SH comme étant intimement liée à celle de médecin en formation et ont décrit leur sentiment d'interconnexion entre les disciplines. Parmi les défis à relever figurent le syndrome de l'imposteur et les difficultés à nouer des relations avec des pairs ayant un bagage scientifique. Les participants ont décrit le fait de revenir à leurs champs d'intérêt liés aux A/SH comme étant un outil de bien-être au courant de la formation médicale.

Conclusions : Les étudiants en médecine qui ont un bagage en A/SH le décrivent comme offrant à la fois des possibilités et des défis pour leur sentiment d'identité, d'appartenance et de bien-être. Ces étudiants constituent une ressource inexploitée : ils ont des dispositions recherchées en médecine et ils ont l'impression de profiter d'un curriculum caché A/H positif qui les aide à conserver ces dispositions au cours de leur formation. Mieux comprendre ces trésors cachés pourrait contribuer à favoriser le développement de médecins compétents et humanistes au sein de leur cohorte.

Introduction

Arts and Humanities (A/H) training is a powerful strategy to develop key competencies in communication, collaboration, compassion, and self-reflection.¹⁻³ These competencies and characteristics nurtured by A/H training closely align with a number of CanMEDS roles that Canadian physicians are expected to embody.⁴⁻⁶ Contributions from Canadian scholars reflect a growing recognition of the value of A/H in healthcare and highlight the unique perspectives and initiatives emerging from the Canadian context. These initiatives have advanced the field of health professional education by exploring the impacts of A/H on patient care,^{7,8} well-being,⁹ and professional development.¹⁰ Both nationally and globally, calls for reform of undergraduate medical education encourage an integration and appreciation of A/H in medical training.^{11,12}

While formal A/H programming in medical schools can support development of key humanistic and reflective skills and competencies, not all medical schools have such formal programming.¹³⁻¹⁶ Furthermore, even schools with formal programming struggle to allot curricular time to these approaches given the bioscience emphasis of undergraduate medical education.¹³⁻¹⁶ There is also a lack of consensus about the A/H content to be taught, uncertainty of pedagogy, student perceptions that A/H content is less important than science content, and limited instructor expertise in these topics, all of which contribute to the challenges of integrating A/H components within the medical school curriculum.¹³ Even with student interest, optional humanities companion curriculums remain underused and reflect a need for increased institutional support, early integration, and faculty development.¹⁷

Considering that Canadian medical schools accept students from diverse academic backgrounds, including those with either formal training or demonstrable interest/engagement in A/H, it may be the case that some students enter medical school with the skills and dispositions that A/H training provides. These students may have developed valuable competencies prior to medical school, but little is known about their experience with the intersection of their A/H background and their medical school training. Our study sought to explore this experience. With the information gleaned from this study, we hope to inform medical educators' approaches to supporting students from A/H backgrounds in sustaining their interests during medical school training, to foster the development of well-rounded and humanistic physicians.

Methods

We used a descriptive qualitative study design^{18,19} to explore the medical school training experience of learners with either a formal background or demonstrable interest in A/H.

We based our definition of 'Arts and Humanities' on a previous scoping review of A/H in medical education.¹⁵ Using this definition, we initially sought participants with a formal A/H background in fields including literature, reflective writing, creative writing, narrative medicine, film and television, theater and drama, visual art, visual thinking strategies, graphic novels and comics, music, dance, theology, philosophy (excluding medical ethics), history (excluding history of medicine), classics, women and gender studies, and critical theory and cultural studies. Formal degrees included degrees at both the undergraduate and graduate levels. Given challenges recruiting sufficient participants with a formal degree in A/H, we expanded our inclusion criteria to include participants who completed an academic minor in A/H and those who displayed a demonstrable interest in these fields. We defined demonstrable interest as active participation in an institution or community A/H-based interest group.

Descriptive qualitative research methodology was chosen for this study because it emphasizes low inference descriptive analysis, rather than more interpretative analysis, which was appropriate to our goal of providing a detailed description of participants' experiences. Low inference descriptive analysis is defined by its focus on the raw qualitative data (i.e. transcripts) without the researchers interpreting the meaning of the interviewees' responses in a specific way. Customary with this qualitative methodology, thematic analysis²⁰ was used in the examination of data.

The research team comprised a researcher (LL) experienced in qualitative research and medical education research, as well as two medical students (KA and AP). Throughout the data collection and analysis process, the research team scheduled regular virtual meetings to discuss and refine the analysis and to interpret the results.

This study was approved by the Western University Research Ethics Board (Project ID: 118994).

Setting and participants (recruitment)

KA and AP conducted interviews between June 2021 and April 2022. Study authors recruited medical students from four English-language medical schools in Canada: University of British Columbia (UBC) Faculty of Medicine, Temerty Faculty of Medicine (University of Toronto), McGill University Faculty of Medicine, and the Schulich School of Medicine and Dentistry (Western University). These four medical schools were chosen for the following reasons: 1) these institutions span three of Canada's main geographic regions (Western Canada, Ontario, and Québec); 2) the first three schools have the largest student populations of the 14 English-language medical schools in Canada, which we anticipated would be a benefit for sampling; and 3) the study authors are located at the fourth school, which we hoped would facilitate student recruitment. We required all participants to have completed at least six months of medical education and were in various stages of their four years of undergraduate medical education. There were no restrictions on age, sex, gender, or other demographic characteristics, but nine of the 13 eventual participants were women.

Study authors facilitated recruitment by emailing medical student leaders of A/H-based interest groups (Table 1). These leaders were contacted through publicly available email addresses, and initial emails included an invitation to participate in the research study and the letter of interest (LOI). Interest group leaders were asked to forward this email to club members. Prior to enrolling in the study, interested medical students were asked to complete a consent form. Study authors deemed data collection and participant recruitment sufficient based on the principle of information power, which entails that the more relevant information the sample holds and the more focused the research question, the fewer participants are needed.²¹

Table 1. Interest groups contacted for participant recruitment.

UBC	Toronto	McGill	Western
Arts in Medicine	Arts & Letters (ArtBeat)	McHAM humanities and arts in Medicine	Aneurhythms A Cappella
Black and Blues Jazz Band	Daffydil		Obliquity: Schulich Chapter
MedPlay	Orbital Groove		Schulich Creates
UBC MUSE			Schulich Singers
UBC Art Gallery			

We contacted a total of thirteen (13) interest groups, spread across four Canadian medical schools. Under each medical school, we list the interest groups approached for this study.

Data collection (interviews)

An interview guide explored each participant's A/H background and their perspectives in three domains: 1) experience with the medical school curriculum; 2) professional identity formation; and 3) socialization experience with traditional and non-traditional medical students. Participants took part in a 45–60-minute semi-structured virtual interview with a member of the research team (KA or AP). Interviews were conducted virtually on Zoom and were audio-recorded. These audio recordings were transcribed verbatim by KA and AP, omitting identifying information.

Data analysis and coding

Qualitative thematic analysis of the interview transcripts was performed by following a well-established 6-step procedure for thematic analysis^{20,22}. This approach included: 1) detailed line-by-line reading of the transcripts to familiarize ourselves; 2) generation of initial codes through open coding; 3) an exploration for themes by exploring relationships among codes; 4) a review of themes to create subthemes and incorporate new data; 5) finalizing of the naming and defining of themes; and 6) production of an integrated report describing each theme and its relation to others in the analysis. Data collection and thematic analysis were iterative, such that themes identified in early transcripts informed further data collection.

Coding was carried out by research team members (KA and AP), supported by regular discussions with an expert qualitative researcher (LL). Initially, five transcripts were examined in depth, initial codes within the data were identified, and a codebook was developed to identify and define preliminary categories. This coding scheme was applied across all transcripts and categories were iteratively refined to include, accommodate, and categorize the accumulating data. Once the codebook was finalized, relationships between categories were explored to develop a meaningful conceptualization of the data. During this process, research team members also independently reviewed the codes and relationships between categories to identify themes. These themes were then reviewed as a team until consensus about pertinent themes was reached.

Results

Participants

In total, 13 medical students were recruited with either a formal background ($n = 8$) or demonstrable interest ($n = 5$) in A/H. Nine students were recruited from Schulich School of Medicine and Dentistry (Western University), one from The University of British Columbia (UBC) Faculty of Medicine, and three from Temerty Faculty of Medicine (University of Toronto). Further participant characteristics are described in Table 2.

Table 2. Characteristics of participants enrolled in study

Participant ID	Year of Study	Gender
001	Completed Year 1	Man
002	Completed Year 1	Woman
003	Completed Year 4	Man
004	Completed Year 3	Woman
005	Completed Year 1	Man
006	Completed Year 2	Woman
007	Completed Year 3	Woman
008	Year 2 in Progress	Woman
009	Year 2 in Progress	Woman
010	Year 2 in Progress	Woman
011	Year 2 in Progress	Woman
012	Year 2 in Progress	Woman
013	Year 2 in Progress	Man

Themes

Through the coding process, we identified 11 sub-themes grouped under three overarching themes (Figure 1).

The three main themes of 1) explicit and hidden curriculum, 2) value of arts and humanities (A/H) and 3) community and identity are identified at the top of the figure, followed by their corresponding sub-themes listed below their headings.

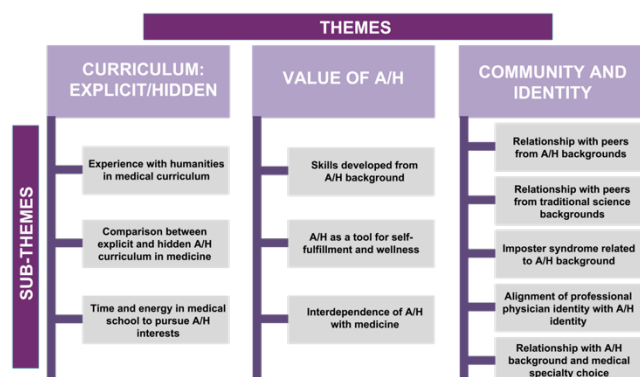


Figure 1. Themes and sub-themes identified during the coding process.

Curriculum: explicit and hidden

All students with a formal background in A/H described feelings of frustration with the perfunctory way that A/H is incorporated into the medical curriculum. They complained that “it’s really just like a checkbox ... I just kind of wish that there was (*sic*) higher stakes and a bit more accountability with taking it seriously” (S002). They pointed out the pedagogical weakness of the checkbox approach: “I’m assuming it had to be on the list somewhere, like check it off, like I’ve talked about the history of medicine ... don’t just teach them the first couple of weeks, and then literally ignore it for the rest because I don’t think it’s ever been brought up” (S005). Not only were A/H curricula seen as superficial and sporadic, they were also critiqued for being generic. One student referred to it as “nonsense...frankly kind of performative, like little ethics sessions we had sprinkled throughout to just check a box and be like “med students learn ethics,” and advocated “instead let me take a grad course in ethics. ...you need to be able to have those opportunities to customize the program” (S006).

Participants also commented on for the value of A/H communication skills in clerkship compared to the lack of emphasis on those skills in pre-clerkship. One explained that:

Once you get into the clinical environment, people start to realize just how important those skills are that you get from arts and humanities.... It's really important to have good bedside manner, it's really important to be able to hear patients out, and to communicate in a way that they're going to understand ... (S004).

However, negative examples of a hidden curriculum were also shared. For instance, one student perceived a tacit expectation from the medical school that she should not show her A/H side in projects, sharing her frustration when she wrote a “3000-word essay on how poetry has really informed my identity. And kept me afloat through medical school, and the whatever random doctor ... marks mine ... failed me and wrote one sentence that said, ‘This is too long.’” Such experiences made the student wonder “‘why did you guys accept me?’ I was pretty honest about who I am, it seemed like people were interested in the perspective I bring and then I share my perspective and you’re like, this is too long” (S006). Finally, the lack of time and energy to pursue A/H interests in medical was a unanimous complaint. Participants felt this was a powerful but tacit influence on their “motivation to keep doing [A/H] things ... there’ll be some periods of time where you’re just

so tired at the end of, you know, having to write a bunch of exams ... that even if you do have the time, you kind of don't want to then, you know, devote several hours to like practicing a really challenging guitar piece" (S003).

Overall, students reported frustration with how A/H content is formally incorporated into the curriculum and lack of time to pursue interests.

Value of Arts and Humanities

Participants almost unanimously reported that their backgrounds in A/H helped them develop certain skills relevant to medicine, including communication skills, reading and writing skills, and perspective-taking. For example, one participant described the relationship between close reading in humanities and talking with patients:

[I've] done close reading so you get really small excerpt of text and then you really dissect, you dissect it very closely... to extract all the meaning that you can out of it. ... that skill has certainly helped in terms of trying to empathize with patients or understand the motivations or ... consider the ... different things a patient might have meant by something that they said (S004).

Another participant described that their A/H background made them more aware of underserved communities:

It makes me really aware of when things aren't right. ... It's kind of pushing deeper than just like social determinants of health but to understand how these broader systems like racism, sexism ageism or what are often foundational contributors to a patient's health or illness (S006).

Other valuable skills mentioned included confidence in public speaking, time management skills, and creative thinking.

Participants, especially those from fine arts backgrounds, reported using participation in A/H as a tool for self-fulfillment and wellness during medical school. An example of a common sentiment was: "And I always feel very happy after doing [music or reading] because it really taps into that artsy side of me that doesn't necessarily always get activated in medical school, which, for the time being is a lot of memorizing" (S004).

Some students specifically reported using A/H as catharsis:

...You have this outlet, right, like I think a lot of times people in medicine don't debrief properly and you get a lot of vicarious trauma, things like that because you just don't have a way to cope and we tend to push everything to the back, and working super hard and not talking about our tough days, is seen as a badge of honour. But with art, you have that time set aside for you to just get out your emotions and work on something (S011).

In contrast, some students reported that due to the demands of medical school, participating in additional A/H activities felt more like a burden: "I feel like I'm so consumed by clerkship, and I find so much fulfillment from the work, that I actually don't feel like I need to keep all that up and it almost feels like more of a burden, like less like an outlet" (S007).

Many students also reported feeling that medicine and A/H were fundamentally intertwined: "Being able to communicate with [patients] in a way that's going to make them feel heard ... I guess the way that I see it is that, yes like arts is a really, really big component of medicine. ... I think that there's a lot that you lose when you just treat medicine as a science and ... forget about how important the arts component is" (S004). Some participants also mentioned connections in the field of bioethics, as well as one participant mentioning how "one of the reasons [she] did really well in anatomy was just because of art" (S011).

In summary, students reported multiple benefits derived from their A/H backgrounds including communication skills, having an outlet for self-fulfillment, and an appreciation for the connection between medicine and A/H.

Community and identity

Most participants with an academic background in A/H described a sense of camaraderie with other medical students with similar backgrounds in A/H, with students describing "anytime I've, like, I find someone who's as interested in the arts and humanities, or philosophy, I think to me it's ... a nice sense of camaraderie where there's not only a shared interest in the arts, but also a shared interest in medicine" (S001). A few participants also reported that their interests in A/H helped them develop new relationships based on shared interest describing that: "as someone who entered med school in a pandemic, it's hard to meet new people and just hit them up and be like, 'Would you like to be my friend?' Whereas it's like I know

you play an instrument and I play, and I love to play with people, would you like to do that sometime?" (S012).

On the other hand, our participants described mixed experiences with classmates from more traditional science backgrounds. Positive experiences were described as "confidence boosting. ... when socializing or interacting with people from science background and then I start discussing my thoughts about AI and trust or epistemology of medicine and stuff like that to them out loud, they seem to be interested in it." (S001). Another student reported "I think that most people are actually very open to humanities, it's just something that they've never heard about before" (S008). However, others reported "[feeling] like we don't get each other fully" (S007). One student from an international development background reported frustration when talking about global issues with classmates: "...in medical school, social culture seems more like it's towards who can be the most correct with our language ... and I feel like they kind of miss the point" (S002).

Participants with a formal degree in A/H described a sense of imposter syndrome, including feelings of inadequacy and knowledge gaps, in medical school. They tended to relate these feelings to "the fact that I didn't have a very scientific background and I had a lot of worries and that I was going to have gaps in my knowledge" and perceived that "I probably studied a lot harder than a lot of my classmates did in first year trying to make up for some of those gaps" (S004).

Some participants also reported a sense of alignment of their professional physician identity with their A/H identity. For instance, one described their identities as intertwined to the extent that "I don't think there's any way in which my arts and humanities background wouldn't impact on the way that I'm approaching medicine because it's just so ingrained to who I am and how I see the world at this point" (S004). Another participant used the analogy of clinician-scientist to explain that "what I would want to do in my future is be some sort of like philosopher-physician. ... I would like to do some sort of like philosophy teaching in the future ... to me, being a philosopher is just as integral to my professional identity as being a physician" (S001). However, not all participants felt their identities were aligned; one remarked that "...outside of class, I was like, I don't know who I am. I feel like I kind of let school take over" (S012).

Participants believed their A/H backgrounds also influenced their choice in medical specialty, with many feeling drawn to psychiatry because of its emphasis on communication. One student reported some tension between feeling that she should go into psychiatry due to her A/H background versus pursuing her interest in surgery:

I'm very seriously considering psychiatry because it is the most like an art than a science. And I think I came in just thinking because I was into humanities, that's what I would end up doing which is really confusing when I find myself liking things like surgery because that was never something that an art student would do (S007).

In summary, students endorsed a sense of camaraderie with students from similar backgrounds, feelings of imposter syndrome, alignment between their A/H and medical identities, and mixed experiences with students from traditional backgrounds.

Discussion

In this study we explored the medical school training experiences of Canadian medical students with a background interest or formal training in arts and humanities (A/H). This study offers a novel perspective from an overlooked stakeholder group, bringing forth A/H student voices to inform how best to support them in sustaining their interests during medical school.

Approaches to medical school recruitment have centered on more broadened inclusion criteria, encouraging students from all academic backgrounds including A/H to enroll, proposing that their background brings unique perspectives and skills valuable to the medical profession.^{1,23,24} Our interviews with students with formal training or demonstrable interest in A/H suggest unintended consequences that medical educators might wish to consider. Our study participants described inadequate time to pursue their A/H interests, lack of understanding from—and trouble socializing with—peers from traditional backgrounds, and feelings of imposter syndrome given knowledge gaps in areas of biomedical sciences. These challenges bring to light the struggles faced by students with A/H backgrounds and encourage educators to be thoughtful about the way in which they engage with these students. Based on our findings, we suggest that it is not simply a matter of enrolling more students with A/H backgrounds; rather we need to create

curricular space for these students to meaningfully maintain their A/H interests.

Previous work suggests that A/H practices may improve observational and reflective skills,²⁵ as well as facilitate communication and perspective-taking skills.²⁶ Consistent with these findings, our participants also perceived that A/H has helped them develop key skills. In considering the epistemic functions of arts-based teaching in medical education described by Dennhardt et al.,²⁷ the reported benefits endorsed by our study participants may therefore be categorized as “Art as dialogue,” highlighting the relational, and perspective-based aspects of arts that can be harnessed for teaching.²⁷ Our participants also suggest that A/H training may provide the added value of self-fulfillment and wellness in medical education. Students not only commented on the ability of A/H to tap into personal or creative reservoirs that are otherwise untouched in traditional medical education, but also proposed A/H as a cathartic outlet for the emotional and mental strain encountered during training. Engaging in A/H practices, such as art-making, may serve as a form of self-care, allowing students to temporarily detach from the demands of their medical training and find solace in the creative process.¹⁰ This act of stress relief and coping may enhance overall well-being and contribute to a healthier balance between personal and professional life.

Our results suggest that beyond the formal addition of A/H in medical curricula, there may also be other ways to incorporate A/H into medical training. Unstructured curricular space, also known as “white space,”²⁸ which is allotted time for students to pursue their own interests, offers opportunities for students to explore A/H in manners that they individually deem most appropriate. Some of our participants stated that involvement in the arts is more valuable when there is room for subjectivity and creative expression. Thus, unstructured curricular space offering students the freedom to customize their projects may offer benefits beyond the current, standardized A/H curricula. Furthermore, our results resonate with previous work on identity dissonance, stress, uncertainty, and lack of belonging experienced by medical students whose personal identities differ from those expected of physicians.^{29–31} To reconcile identity dissonance between A/H and physician identity, participants who closely aligned with both identities proposed a sense of duality in their professional self-characterization. Dual identity has been described in previous work with clinician-scientists; in reconciling these identities, clinician-scientists bridged

their two identities, offering novel insight based on their dual experience.³² Similarly, participants in our study commented on the interplay between the values from both A/H and medical training, suggesting that each may support the development of the other. In this manner, fostering a bridged identity may facilitate resilience in maintaining a career that embraces multiple disciplines. This finding may be helpful for educators when considering how best to implement A/H curricula in medical education. A/H practices such as art-making in medical education may facilitate the exploration and expression of personal and professional identities by allowing students to use arts as a means to reflect on their values, experiences, and aspirations—ultimately contributing to a clearer self-conception.^{9,10,33,34}

We anticipate that the findings of this paper have relevance for multiple levels of stakeholders in medical education, including medical school administrators, faculty, and students themselves. For medical school administrators, we highlight the finding that students in our study were frustrated by the lack of time to pursue their passions. Of course, medical education requires learning of a great deal of information, and it may not be feasible, or appropriate, to remove specific topics or content from the curriculum. However, students also express frustration at being required to express themselves in specific ways, such as writing an essay about an experience. These assignments may also contribute to the lack of time to pursue their independent interests, and we recommend that instead of mandating specific forms of expression, students instead be supported to use that time to express themselves as they choose. For professors, we highlight the finding that students in our study express frustration that arts and humanities curricular content is not treated as seriously as science content, in the sense that it is both superficial and sporadic. We recommend arts content—for example, history of medicine and medical ethics—be incorporated throughout the curriculum rather than contained to a handful of lectures. We also recommend that students be given the opportunity to explore these topics on a deeper level if they choose; for instance, they can be provided with optional additional readings or introduced to the university’s history of medicine department (if applicable). For students who wish to continue their arts and humanities interests in medical school, we recommend starting and/or joining interest groups devoted to those topics (e.g., history of medicine, creative writing, and music clubs). Many of our interviewees expressed a sense of camaraderie and

belonging when interacting with other students from similar backgrounds, and relevant interest groups may be an effective tool to form those connections.

Limitations

Difficulty recruiting led to a smaller sample size than we anticipated. Although the sample was information rich²¹ and provided sufficient data to describe recurring themes, it was homogenous: of the 7 students with formal degrees in A/H, 5 did an interdisciplinary undergraduate degree in the Arts and Sciences, and 4 of those 5 went to the same small Arts and Science program at one university. We expect that a larger sample from more institutions that includes a more diverse cohort of medical students with A/H degrees would enrich these insights. The sample also included a greater proportion of participants from our own medical school than planned, largely due to the modification of the recruitment strategy from email recruitment to word-of-mouth recruitment when the former proved unsuccessful. Eight of the participants were medical school classmates of two of the study authors, and an additional two were former undergraduate classmates of one of the authors. This personal relationship between the participants and the authors/interviewers may have influenced the results, although we do not anticipate that it limited the authenticity of the interviews as the topics broached were not particularly sensitive or confidential in nature. We expect that the poor response rate to our recruitment strategies was at least partially due to the lack of free time that most medical students have, and we urge other researchers considering similar recruitment strategies to be mindful of this obstacle.

Conclusion

Medical students with a background in A/H training describe both affordances and challenges for their development as expert clinicians and their sense of identity, belonging, and wellness. A/H training reinforces skills that are of value to physicians, including communication, collaboration, compassion, and self-reflection. These students offer an untapped resource: they come with dispositions of value to medicine, and they perceive the formation of a dual professional identity that supports their maintenance of these dispositions during training. Understanding more about the experiences and perspectives of these students could help us better understand how to support them in sustaining their interests while training to be physicians, as well as how

sustaining those interests may help them and their patients.

Authorship: Khadija Ahmed and Arjun Patel contributed equally to this manuscript as co-first authors.

Conflicts of Interest: The authors declare that they have no conflicts of interest with the contents of this article.

Funding: This work received no external funding.

Edited by: Anita Acai (section editor), Christina St. Onge (deputy editor), Marcel D'Eon (editor-in-chief)

References

1. Mangione S, Chakraborti C, Staltari G, et al. Medical students' exposure to the humanities correlates with positive personal qualities and reduced burnout: a multi-institutional U.S. survey. *J Gen Intern Med*. 2018;33(5):628-634. <https://doi.org/10.1007/s11606-017-4275-8>
2. Wershof Schwartz A, Abramson JS, Wojnowich I, Accordino R, Ronan EJ, Rifkin MR. Evaluating the impact of the humanities in medical education. *Mt Sinai J Med*. 2009;76(4):372-380. <https://doi.org/10.1002/msj.20126>
3. Wald HS, McFarland J, Markovina I. Medical humanities in medical education and practice. *Med Teach*. 2019;41(5):492-496. <https://doi.org/10.1080/0142159X.2018.1497151>
4. Frank JR, Danoff D. The CanMEDS initiative: implementing an outcomes-based framework of physician competencies. *Med Teach*. 2007;29(7):642-647. <https://doi.org/10.1080/01421590701746983>
5. Dellasega C, Milone-Nuzzo P, Curci KM, Ballard JO, Kirch DG. The humanities interface of nursing and medicine. *J Prof Nurs*. 2007;23(3):174-179. <https://doi.org/10.1016/j.profnurs.2007.01.006>
6. Ramai D, Goldin S. Humanities in medicine: preparing for practice. *Perspect Med Educ*. 2013;2(5-6):332-334. <https://doi.org/10.1007/s40037-013-0086-8>
7. Gao L, Peranson J, Nyhof-Young J, Kapoor E, Rezmovitz J. The role of "improv" in health professional learning: A scoping review. *Med Teach*. 2019;41(5):561-568. <https://doi.org/10.1080/0142159X.2018.1505033>
8. Fox AL. Evaluation of a pilot arts and health module in a graduate community nutrition program. *Can J Diet Pract Res*. 2009;70(2):81-86. <https://doi.org/10.3148/70.2.2009.81>
9. Maruyama M. Medical doodles: 30 minutes well spent. Interview by Carol Ann Courneya. *Can Med Assoc J*. 2012;184(12):1395-1396. <https://doi.org/10.1503/cmaj.111453>
10. Cox SM, Brett-MacLean P, Courneya CA. "My turbinado sugar": Art-making, well-being and professional identity in medical education. *Arts Health*. 2016;8(1):65-81. <https://doi.org/10.1080/17533015.2015.1037318>
11. Emanuel EJ. Changing premed requirements and the medical curriculum. *JAMA*. 2006;296(9):1128-1131. <https://doi.org/10.1001/jama.296.9.1128>

12. Smydra R, May M, Taranikanti V, Mi M. Integration of arts and humanities in medical education: a narrative review. *J Cancer Educ.* 2022;37(5):1267-1274. <https://doi.org/10.1007/s13187-021-02058-3>
13. Kollmer Horton ME. The orphan child: humanities in modern medical education. *Philos Ethics Humanit Med.* 2019;14(1):1. <https://doi.org/10.1186/s13010-018-0067-y>
14. Banaszek A. Medical humanities courses becoming prerequisites in many medical schools. *Can Med Assoc J.* 2011;183(8):E441-2. <https://doi.org/10.1503/cmaj.109-3830>
15. Moniz T, Golafshani M, Gaspar CM, et al. How are the arts and humanities used in medical education? results of a scoping review. *Acad Med.* 2021;96(8):1213-1222. <https://doi.org/10.1097/ACM.0000000000004118>
16. Kidd MG, Connor JTH. Striving to do good things: teaching humanities in Canadian medical schools. *J Med Humanit.* 2008;29(1):45-54. <https://doi.org/10.1007/s10912-007-9049-6>
17. Axelrod C, Brenna CT, Gershon A, Peterkin A, Nyhof-Young J. The Companion Curriculum: medical students' perceptions of the integration of humanities within medical education. *Can Med Educ J.* October 2022. <https://doi.org/10.36834/cmaj.72907>
18. Sandelowski M. Whatever happened to qualitative description? *Res Nurs Health.* 2000;23(4):334-340. [https://doi.org/10.1002/1098-240X\(200008\)23:4<334::AID-NUR9>3.0.CO;2-G](https://doi.org/10.1002/1098-240X(200008)23:4<334::AID-NUR9>3.0.CO;2-G)
19. Kim H, Sefcik JS, Bradway C. Characteristics of qualitative descriptive studies: A systematic review. *Res Nurs Health.* 2017;40(1):23-42. <https://doi.org/10.1002/nur.21768>
20. Braun V, Clarke V. *Thematic analysis: a practical guide.* Los Angeles, CA: SAGE; 2022.
21. Malterud K, Siersma VD, Guassora AD. Sample size in qualitative interview studies: guided by information power. *Qual Health Res.* 2016;26(13):1753-1760. <https://doi.org/10.1177/1049732315617444>
22. Kiger ME, Varpio L. Thematic analysis of qualitative data: AMEE Guide No. 131. *Med Teach.* 2020;42(8):846-854. <https://doi.org/10.1080/0142159X.2020.1755030>
23. Ratzan RM. How to fix the premedical curriculum-another try. *JAMA.* 2019;322(8):710-711. <https://doi.org/10.1001/jama.2019.11480>
24. Peterkin A, Beausoleil N, Kidd M, Orang B, Noroozi H, Brett-Maclean P. Medical humanities in Canadian medical schools. In: Alan B, ed. *Routledge Handbook of the Medical Humanities.* 1st ed. London: Routledge; 2019:364-374.
25. Bramstedt KA. The use of visual arts as a window to diagnosing medical pathologies. *AMA J Ethics.* 2016;18(8):843-854. <https://doi.org/10.1001/journalofethics.2016.18.8.imh11-1608>
26. Hunter KM, Charon R, Coulehan JL. The study of literature in medical education. *Acad Med.* 1995;70(9):787-794.
27. Denhardt S, Apramian T, Lingard L, Torabi N, Arntfield S. Rethinking research in the medical humanities: a scoping review and narrative synthesis of quantitative outcome studies. *Med Educ.* 2016;50(3):285-299. <https://doi.org/10.1111/medu.12812>
28. Kumagai AK, Naidu T. Reflection, dialogue, and the possibilities of space. *Acad Med.* 2015;90(3):283-288. <https://doi.org/10.1097/ACM.0000000000000582>
29. Monrouxe LV. Identity, identification and medical education: why should we care? *Med Educ.* 2010;44(1):40-49. <https://doi.org/10.1111/j.1365-2923.2009.03440.x>
30. Joseph K, Bader K, Wilson S, Walker M, Stephens M, Varpio L. Unmasking identity dissonance: exploring medical students' professional identity formation through mask making. *Perspect Med Educ.* 2017;6(2):99-107. <https://doi.org/10.1007/s40037-017-0339-z>
31. Ledger A, Joynes V. "A huge part of my life": Exploring links between music, medical education, and students' developing identities as doctors. *MedEdPublish.* 2018;7(3). <https://doi.org/10.15694/mep.2018.0000183.1>
32. Kluijtmans M, de Haan E, Akkerman S, van Tartwijk J. Professional identity in clinician-scientists: brokers between care and science. *Med Educ.* 2017;51(6):645-655. <https://doi.org/10.1111/medu.13241>
33. Kumagai AK. Perspective: acts of interpretation: a philosophical approach to using creative arts in medical education. *Acad Med.* 2012;87(8):1138-1144. <https://doi.org/10.1097/ACM.0b013e31825d0fd7>
34. Rabow MW. Drawing on experience: physician artwork in a course on professional development. *Med Educ.* 2003;37(11):1040-1041. <https://doi.org/10.1046/j.1365-2923.2003.01650.x>