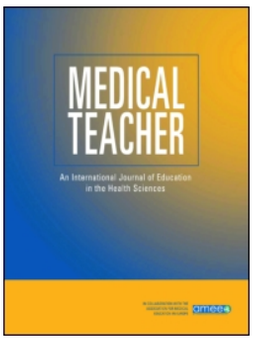

Medical Teacher

ISSN: 0142-159X (Print) 1466-187X (Online) Journal homepage: http://www.tandfonline.com/loi/imte20

A critical scoping review of the connections between social mission and medical school admissions: BEME Guide No. 47

Rachel H. Ellaway, Rebecca Malhi, Sameer Bajaj, Ian Walker & Douglas Myhre

To cite this article: Rachel H. Ellaway, Rebecca Malhi, Sameer Bajaj, Ian Walker & Douglas Myhre (2017): A critical scoping review of the connections between social mission and medical school admissions: BEME Guide No. 47, Medical Teacher, DOI: 10.1080/0142159X.2017.1406662

To link to this article: https://doi.org/10.1080/0142159X.2017.1406662

MEDICAL TEACHER, 2017
https://doi.org/10.1080/0142159X.2017.1406662

MEDICAL TEACHER
Taylor & Francis
Taylor & Francis Group

BEME GUIDE

A critical scoping review of the connections between social mission and medical school admissions: BEME Guide No. 47

Rachel H. Ellaway[a], Rebecca Malhi[b], Sameer Bajaj[b], Ian Walker[c] and Douglas Myhre[d]

[a]Department of Community Health Sciences, Cumming School of Medicine, University of Calgary, Calgary, Alberta, Canada; [b]Department of Distributed Learning and Rural Initiatives, Cumming School of Medicine, University of Calgary, Calgary, Alberta, Canada; [c]Department of Emergency Medicine, Cumming School of Medicine, University of Calgary, Calgary, Alberta, Canada; [d]Department of Family Medicine, Cumming School of Medicine, University of Calgary, Calgary, Alberta, Canada

ABSTRACT

Background: Despite a growing focus on the social accountability of medical schools, there has been no substantive review of admissions related to the social mission of medical schools. This paper reports on a critical scoping review of the connections between social mission and medical school admissions.

Methods: Searches of seven bibliographic databases identified 1258 unique articles. After filtering for relevance, 71 articles were considered for final review. The results of the data extraction were synthesized using a combination of qualitative and quantitative techniques.

Results: Five reviewers conducted 149 data extractions from 71 papers. Social missions tended to focus either on access and equity issues for applicants from underrepresented populations or on the career choices of medical graduates and how they meet particular social needs. The connection between social missions and admissions was often implied but rarely considered or evaluated directly. There was a notable absence of empirical evidence, with calls for reform or program descriptions far outweighing the number of papers based on empirical findings.

Conclusions: Despite the move to social missions in medical education, there remains little direct connection between missions and admissions and little evidence reflecting the efficacy or impacts of making this connection.

Background

Who we admit to medical school is a fundamental issue in medical education. With a growing focus on the social missions of medical schools (Cappon et al. 2001; Boelen and Woollard 2011), many admissions committees are looking at a wide range of factors and outcomes in selecting suitable candidates for the medical profession. What constitutes a social mission depends on the school in question, but in general "beyond their general educational mission, medical schools are expected to have a social mission to train physicians to care for the population as a whole, taking into account such issues as primary care, underserved areas and workforce diversity" (Mullan et al. 2010). To that end and for the purposes of this study, we considered any strategic commitment (explicit or implied) of a medical school to social matters as a social mission.

Although social missions can be expressed in many ways, it would seem important that the admissions processes of a medical school are aligned with the desired outcomes of its social mission. This might be reflected in the provision of pipeline programs for under-represented groups, involving community members in selection processes, or looking for a particular profile of incoming students (such as recruiting students who reflect the population demographic or those with a disposition to serve in specific settings). However, social missions are often in competition with other institutional drivers and their internalization in the work of a school may be partial at best (Ellaway et al. 2017). Given that there are many ways in which a social mission and admissions may or may not be well connected, we wanted to better understand the current landscape.

A preliminary search for reviews (of any kind) around general admissions issues yielded one study (Ferguson et al. 2002) and we found one other study that considered admissions related to the social mission of medical schools (Bandiera et al. 2015). The Ferguson et al. study was the

Practice points

- Although medical school admissions and social missions are linked, there has been little published activity that explicitly makes connections between the two.
- The literature that connects medical school admissions and social missions is more often aspirational than based on tangible activity or evidence.
- The social mission is typically one competing driver among many that shape medical school admissions at an institutional level.
- A lack of reflexivity and examination of the ideologies and assumptions that underlie admissions at different medical schools tends to reinforce the status quo.

CONTACT Rachel Ellaway rachel.ellaway@ucalgary.ca Community Health Sciences, Cumming School of Medicine, University of Calgary, 3280 Hospital Drive NW, Calgary, Alberta, T2N 4Z6, Canada

Supplemental data for this article can be accessed here.

only full systematic review we found and it focused on individual learner characteristics and considered medical education in an undifferentiated manner with no consideration of different characteristics being required for different kinds of schools or outcomes. The Bandiera et al. study (which included a literature review as part of a broader study rather than reporting on a systematic review) identified a growing focus on diversity and accountability in admissions, but with little consensus or evidence to identify what criteria were to be used or what the outcomes of this should be. The connections between social missions and admissions were considered briefly although equity issues were considered to be as much a societal issue as one for medical education.

Our focus was on the connections between a school's social mission and its admissions, both in terms of how the mission translated to admissions practices, values and policies, and how admissions acted as a mechanism for realizing the social mission. This paper reports on a BEME critical scoping review of these connections between social mission and medical school admissions. The review investigated how medical schools' social missions have been related to the recruitment and selection of students for their undergraduate medical programs. More specifically, our review question was:

> How do the social missions of medical schools translate to their admissions policies and practices for undergraduate medical education, and how do their admission policies and practices contribute to their social missions?

Our objectives were to: identify published empirical and nonempirical evidence of how medical schools' social missions are translated to their undergraduate admissions processes and how their admissions processes support their social missions; relate the sociopolitical aspects of admissions to social missions; review the strengths and weaknesses of the research effort into this area; review and critique the social and conceptual basis for the literature in this area; and synthesize existing knowledge and identify gaps and opportunities for future studies.

The review methodology was peer-reviewed and approved by the Best Evidence in Medical Education (BEME) Collaboration (Ellaway et al. 2016). We report our methodology and results using elements from the PRISMA guidelines (Moher et al. 2009) appropriate to this kind of review. We have provided a glossary of terms used in this study.

Methods

We framed this study as a critical scoping review as a way of exploring what we anticipated would be a broad and potentially diffuse topic with a heterogeneous literature base and a mix of ideological and practical positions (Arksey and O'Malley 2005). We also approached this from the perspective of a qualitative evidence synthesis using interpretive thematic analysis (Bearman and Dawson 2013).

We conducted an initial scoping search using Google Scholar with the search term "social accountability in medical school admissions". This search identified 24 papers. We then hand searched the references in each of these papers to identify additional papers, which netted a total of 42 papers for initial review. RE & SB separately read these articles, tagging them for relevance (considering admissions to undergraduate health professional education involving some sense of a social mission). We rejected 22 papers for not meeting these criteria. We made notes on the key issues and themes arising from the remaining 20 papers which were used (in mid-2015) to conduct pilot searches of Medline (Ovid), PubMed, CINAHL, Medline (Embase), Web of Science, Eric, and Scopus databases. The results for these literature searches were then analyzed for differences in keywords, and the extent of overlap and duplication between sources. Further refinement by RE and RM identified the most effective variation for the final set of search terms – see Supplemental Appendix 1. The initial search was also used to develop and pilot a data extraction instrument - see Supplemental Appendix 2. We rated the ways in which papers considered the connection between the social mission and admissions using Kirkpatrick impact levels (Kirkpatrick and Kirkpatrick 2006; Steinert et al. 2006).

The final searches were conducted in October 2016 and netted 1738 papers. These were entered in to EndNote bibliographic software and 480 duplicates were identified and removed. This left 1258 papers that were then filtered for eligibility: studies with a focus on medical student selection or recruitment or admissions, and where a social mission was present either implicitly or explicitly were included. We included articles of any study design or outcome measure that were in English (investigators were monolingual English speakers) and were published between 1970 and 2016.

RE and RM reviewed the title and abstract of a random selection of 90 papers for relevance to the study and calibrated an agreed threshold for inclusion and exclusion. RM (acting as the study research associate) then reviewed the title and abstract for the remaining 1168 papers. One paper was excluded when it was found to be a brief conference abstract lacking sufficient detail to be useful. In total, 1187 records were excluded, which left 71 papers for full review.

Papers were allocated to the five team members for data extraction so that every paper was extracted by two individuals working independently and each paper extracted by both a PhD and an MD extractor. Given that this was a critical scoping review, we were less interested in ensuring the reliability between data extractors and more interested in capturing and synthesizing the rich variety of perspectives and outcomes the papers presented. We therefore aggregated the extraction data for each paper for analysis. Following a scoping review approach, extractors noted the study methods and the strengths and weaknesses of each paper but did not directly assess study quality.

We synthesized the data extraction using descriptive statistics for structured response questions and interpretive thematic analysis techniques (Bearman and Dawson 2013) for unstructured response questions. This involved RE conducting line-by-line coding and iterative axial coding of all of the data extraction material, with RM, DM and IW reading the data extractions and preparing interpretive narratives structured around the key themes they had identified from the data extraction. The group iteratively discussed and synthesized these intermediate synthesis steps around emerging high-level themes and topics. This involved a series of group writing exercises and discussions. Although there was an opportunity to express alternative

perspectives, no major disagreements in interpretation emerged from this process.

Results

Five reviewers conducted 149 data extractions from 72 papers. All papers were extracted by at least two reviewers, three papers were extracted by three reviewers to check for consistency and for calibration purposes. The cascade of search and exclusion steps is provided in Figure 1.

In terms of country of origin, the USA dominated (52.8%), followed by Canada (27.8%), Australia (8.3%), and the United Kingdom (5.6%); 5.6% of the papers reflected multi-country studies. Study context was not specified in 62.1% of the papers. Where it was specified, it was 'both urban and rural' (22.0%), "urban/suburban only" (10.6%), or "rural/remote only" (5.3%). We noted variations in terminology used: "social accountability" (37.2%), "social mission" (24.1%), "social responsibility" (16.8%), and "social contract" (10.2%). Similarly, articles discussed admissions (73.7%), selection (48.2%), recruitment (34.3%) and enrollment (8.8%). Reviewers noted that 48.3% of the papers were relevant to the project in terms of actively informing our review of connections between mission and admissions. However, we found useful insights into social missions and admissions even for those papers that were reviewed but were not considered to be directly relevant. Extracted data from these papers were therefore included in the findings from this review.

The connections between a social mission and admissions were considered (if at times tangentially) in 55.6% of the studies reviewed. More specifically, a mission was connected to admissions in terms of; participation in medical education (Kirkpatrick level 1–18.1% of all studies – note that papers could be tagged as reporting on more than one Kirkpatrick level), short-term learning (level 2–13.9%), behavioral change (level 3–11.1%) and system level impacts (level 4–48.6%). There were fewer studies which considered the impact of admissions on the social mission (25%). Those that did tended to focus more on system-level impacts (19.4%), than on participation (8.3%), short term learning (9.7%) or behavioral change (5.6%).

Many studies used a mixture of methodologies: expert opinion (32.4%), history (24.3%), case study (16.9%), survey (16.9%), audit (10.8%), program description (10.1%), report/evaluation (7.4%), commentary (6.8%), cohort study (6.1%), observational study (6.1%) and qualitative analysis (such as discourse analysis – 5.4%). Other study methods used included: nonsystematic reviews (4.7%), interviews (4.7%), focus groups (4.1%), cross-sectional analysis (2.0%), time series (2.0%), pre/post study (1.4%), and systematic reviews (1.4%). There were no reported uses of randomized or non-randomized controlled trial study designs.

Analysis

Social missions

We took an inclusive approach in considering studies that implied a mission (in terms of a principle- or morally-guided strategic goal) as well as those that stated one explicitly. Missions tended to be explicit at the institutional level but implied at national or whole system levels.

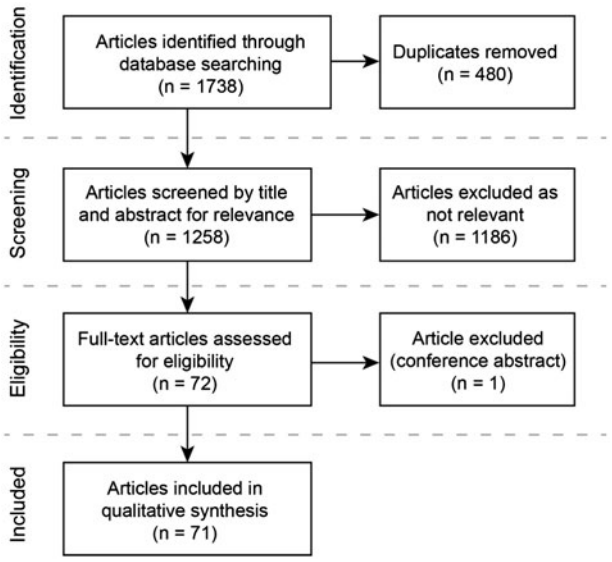

Figure 1. PRISMA flow diagram of article searching and screening.

Although we found many different dimensions of social missions or imperatives, they tended to focus either on access to the medical profession (we called these "front-end missions") or on meeting societal or workforce needs (we called these "back-end missions"). Front-end missions primarily focused on mechanisms seeking to increase the diversity of the physician workforce, to improve access to medical careers for specific populations, or to pursue equity, justice and fairness in being able to access medical careers in general. Diversity in these missions was seen as good unto itself, independent of any measurable outcome. Back-end missions, on the other hand, focused on their graduates and the impacts they had beyond the school. Back-end mission mechanisms tended to concentrate on influencing learner career choices as a way of meeting specific regional or community needs. Despite this emerging duality, the papers typically did not acknowledge this distinction.

We also noted an interesting difference between missions that were primarily generated and sustained within an organization, and those whose missions were articulated as responding to external drivers, such as policy or societal changes, or funding opportunities. For a very few schools, their social missions tended to be their primary institutional organizing principle. However, for the majority of institutions, a social mission was clearly one strategic driver among many competing drivers.

We found no standard terminology to define a "social mission"; concepts such as mission, mandate, responsibility, obligation, justice, equity and accountability were used fairly loosely and interchangeably. In addition, institutional foci varied not just in terms of the "what" or "why" of missions but also the "whom", as the agents or beneficiaries varied between individuals, communities, medical schools and their broader societal contexts. Although we took a very inclusive perspective on what might constitute a social mission in the context of this study, we acknowledge that these concepts are not necessarily congruent or interchangeable.

Admissions

We identified a wide range of admissions factors that schools considered, including: age; previous academic

performance; performance on specific standardized exams (such as the Medical College Admission Test (MCAT) from the United States); social or family background; ethnicity; gender; life experience; personal motivation or vocation; language; communication or other social abilities; recommendations of teachers or communities; and previous clinical or biomedical work experience. We also noted a wide range of admission assessment techniques being used, including; file reviews, interviews, involvement of community members, and quotas. There were also different pread-missions support mechanisms in place, including: policies and pipeline programs for increasing diversity and under-represented minority student recruitment; outreach, mentorship or shadowing programs for high school and undergraduate prospective students; post-admissions support for under-represented minority students; and active community engagement in the form of school visits and meetings with local leaders. There was no discernible correlation between the admissions techniques schools used and the kinds of missions they had committed to. The implication is that the pursuit of a social mission did not seem to have constrained the diversity of admissions values or approaches.

Connections between social mission and admissions

The connection between an individual school's social mission and its admissions depended to a great extent on the nature of the social mission. If the mission was primarily focused on front-end issues (e.g. access to medical careers), the logical connection with admissions as the primary mechanism for entering medical school was immediately apparent (although not necessarily realized). If the mission focused on back-end serving social or community needs (typically through directing graduate career choices) then, although admissions was still connected to the mission, it was not necessarily the primary mechanism used in achieving the mission. Curriculum and community placements were more prominent in this regard. Schools tended to work backwards from the goals of the mission, designing programs around specific types of practice that related to the goals, and then selecting individuals who were best suited to the program.

For schools with a less specific or explicit social mission, admissions processes tended to reflect less of the mission's principles. Even where social missions were more explicit, there were limits to how connected social missions and admissions were. Central to this was the nature of the national medical school admissions culture and regulation each school was subject to. Depending on context and independent of their social missions, schools had more or less latitude in defining what values and characteristics they were looking for, and how much control they had over its admissions policies and processes. For instance, affirmative action in admissions for African-American applicants in the United States was discontinued when it was ruled as unlawful (Cohen 2003).

Notions of social accountability in medical school selection varied widely between jurisdictions. Canada, Australia and Nepal featured prominently in the papers reviewed, with schools in the US seeming less committed to the notion, and the United Kingdom reflecting only fledgling notions of what a social mission might entail in terms of medical school admissions.

As we noted earlier, the social mission for many schools was only one factor among other competing drivers, and we found very few instances where it was the dominant driver for admissions. We also found that the connections between a mission and admissions were limited by other drivers, in particular a focus on academic excellence. In fact, we noted an interesting tension that was evident in several papers from North America. For instance, Razack et al. noted an intrinsic tension between pursuing inclusiveness for under-represented populations and an inherently exclusionary meritocratic admissions process (2015). However, there were also several studies that indicated that the pursuit of a social mission did not necessarily mean lowering academic standards (Strasser et al. 2013; Leigh-Hunt et al. 2015).

There was some indication of reciprocity between a social mission and admissions, particularly where admissions had contributed to a school realizing their mission objectives. However, there were no precise definitions or audits of how this had worked; it was implied or suggested but not rigorously tested. An exception to this was the multi-center study by Larkins et al. (2015) demonstrated that selection strategies can play a role in increasing the chances of entry to medical school for applicants from under-represented and under-served populations. Furthermore, these students tend to have practice intentions that differ from those from better served populations and may be better aligned with the social mission.

Papers that did consider reciprocity tended to be high-level calls for medical education reform rather than studies or reports. One of the few schools to have established the connection between admissions and its social mission was the Northern Ontario School of Medicine (NOSM). This institution opened in 2005 with a social mission that dominated its admissions and its programing, and was afforded the latitude to do so within the Canadian medical education system. NOSM has reported on how its admissions policies have contributed to its realization of its social mission (Strasser et al. 2013). Where NOSM focused on applicants' characteristics, the University of Illinois at Rockford focused instead on the commitment of a subset of applicants in the form of a pledge to return to Illinois after their residencies to practice primary care medicine (Glasser et al. 2008). However, it is important to note that there were no reports of a social mission having been fulfilled, and that as a result, admissions or the mission had been changed or revised. The problems that the mission was to address persisted, and as such, the long-term efficacy and effectiveness of the connections between social missions and admissions had not been systematically established or tested.

These examples are the exceptions; most articles did not study or address the impact of admissions on social mission and, where it was considered, the connections tended to be speculative rather than concrete. Given that just over 44% of the papers we reviewed were commentaries or expert opinions, it is not surprising that there was a substantial aspirational side to the material we considered. From this we identified four proposed mechanisms for admissions reform.

1. *Changing the criteria for selection:* this involved balancing the potentially conflicting drivers of academic ability, diversity and service to society factors, with more attention to the whole person and their potential as a physician.
2. *Removing factors that create or sustain inequalities:* primarily this involved addressing intrinsic biases of selectors through the training and orientation of admissions committee members and reviewers, or in some situations, removing or reducing financial barriers. The other recurring issue was that standardized testing (such as the MCAT) perpetuated social inequities in admissions with the implication that their realignment or removal or would help to address these inequities.
3. *Increasing explicit social accountability:* this involved increasing the transparency of admissions regarding their values, processes, and outcomes.
4. *Facilitating applications from under-represented populations:* this involved pipeline programs, mentoring and other pre-admissions outreach programs for high school and undergraduate prospective students, summer enrichment programs and post-baccalaureate programs, and conditional acceptance pathways.

Factors that impact study and evidence quality

As we have noted, the majority of material reviewed was descriptive or speculative with few studies presenting hard evidence to support their claims. Indeed, most of the papers reviewed did not report on a study as such but rather on programs (with or without longitudinal data). We found some use of critical theoretical methods such as critical discourse analysis (Razack et al. 2015), but this was the exception rather than the rule. We also found that the literature reviewed often focused on issues such as career choices or curriculum, with admissions and social missions as part of the context rather than the focus for the study.

The front- and back-end differences in social missions was also an issue. Papers from the United States and the United Kingdom tended to focus more on front-end social missions and those from Canada and Australia tended to focus on back-end social missions. Although there were exceptions, these papers were notably different in scope and ambition and in the amount and kinds of evidence presented.

We found significant heterogeneity in the terms and concepts that were used, both with respect to admissions (selection, recruitment) and social missions in the papers reviewed. We discuss the impact this had on the review later in the paper. This was a study and evidence quality issue due to the ambiguity and variation in the constructs used and positions taken.

We also found several instances in the reviewed literature that indicated potential publication biases. The relatively small number of practical examples of connections between the mission and admissions suggested challenges to publishing on this topic or the limited extent to which schools share these activities with the wider community. Publication bias was also reflected in the number of papers from or about a relatively small number of pioneering schools (such as NOSM in Canada and the Patan Academy of Health Sciences (PAHS) in Nepal) both in terms of overall weighting of evidence and in terms of their particular circumstances. We also identified an absence of reports regarding failures or problems in connecting social missions and admissions. We know from informal conversations among schools and educators that many social accountability and diversity initiatives have been less effective than their designers had anticipated, but this is not being reported in the literature. Indeed, despite a growing commitment to social missions, national level data shows declining or plateauing diversity across medical schools generally (Grbic et al. 2015; Long et al. 2015).

There was a notable absence of consistent use of terms and concepts both with respect to admissions (selection, recruitment) and with social missions in the papers reviewed and in the key terms used by the bibliographic databases. We were surprised to see the extent of "celebratory" discourses in the reviewed literature, with almost all of the existing programs being described as having preliminary successes. Only one review noted that the implemented changes did not achieve the results that were needed (Campbell et al. 2011). We recommend that future reports from medical schools should strive to be more balanced in considering weaknesses as well as strengths, and in considering less positive impacts as well as those that are positive. Finally, a serious limitation in the literature was reflected in whose voices were and were not represented. While the voices of those in power (such as deans), from the academy, or from the medical profession were prominent, there was very little included from two of the most important stakeholders: students and communities. When the overtly stated goal of social mission initiatives is to address student and/or community needs or wishes, the absence of these populations in the discussion about their own future is disturbing and raises questions about the commitment of medical schools to these initiatives.

Discussion

Social missions have been embraced as desirable and necessary by many medical schools around the world, and if research productivity is an indication, this is particularly found in North America (Mullan et al. 2010). The connection between social missions and admissions is considered in the literature both explicitly and implicitly. However, despite the many arguments and implications for making this connection, we found a paucity of action or reporting of outcomes from connecting social missions with admissions.

One reason for this gap in the literature arises from the different areas of focus taken by studies and their authors. At the microlevel, a lot of attention was given to the individual medical school applicant. There were quite different assertions made regarding what characteristics medical school selection should focus on. Is someone who will succeed academically in medical school preferable? Or is someone with a particular set of experiences, inclinations or personality traits preferable? Are these two models mutually exclusive? From the point of view of admissions committees, it was easier to infer that someone who has already succeeded academically (often measured by MCAT score and grade point averages (GPAs) from previous academic courses and programs) will also succeed at medical school in the preclinical years – the years when most

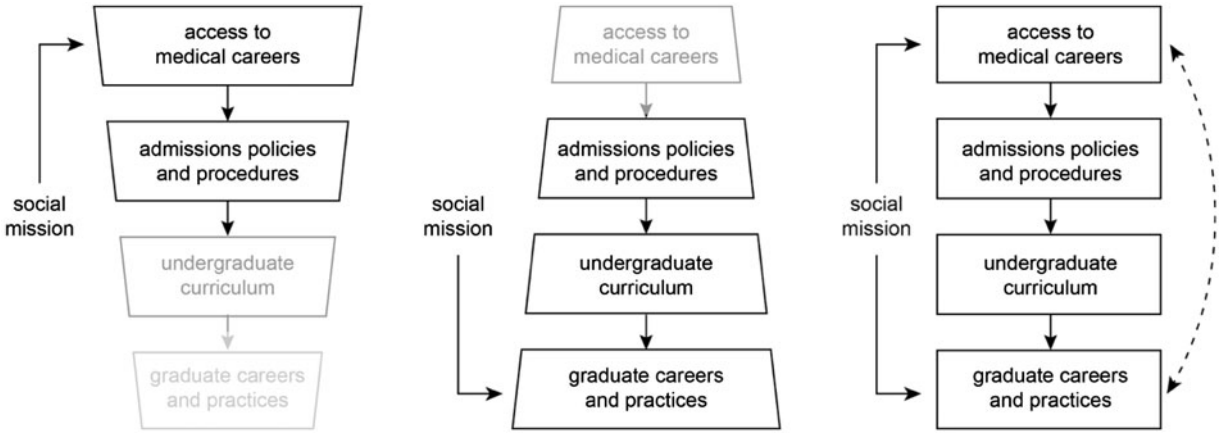

Figure 2. Three patterns of connection between social mission and admissions. On the left, the focus of the front-end mission is on access to training. In the middle, the focus of the back-end mission is on the outcomes of training. On the right, the focus is on both front-end access and back-end outcomes, which allows admissions to consider both access and product in realizing the social mission.

factual knowledge is acquired. The counter-argument made by critics is that academic fitness does not necessarily translate to fitness to be a doctor.

At the next higher level of focus, the conversation changed from "fitness" to "access", particularly for under-represented minority groups. Here, we encountered parallel discourses: some papers focused on access to medical training as the desirable outcome; others on access as a mechanism in achieving a longer-term outcome around social justice and access to care (Figure 2). This was reflected in recurring tensions between a medical school's duty to its students, the duty to its parent institution, and its duty to society. Some schools, especially those in geographically large and ethnically diverse countries such as Australia or Canada, noted inequities with the distribution of the current workforce and focused on this supply problem. Others, particularly those in United States, focused on fairness in recruiting candidates that reflect the diversity of their society within acceptable legal boundaries. The AAMC Holistic Review Project was a central example of this as it was based on a model that had been endorsed by the US Supreme Court (Witzburg and Sondheimer 2013).

Finally, there is the top, societal level of focus. Although it has been demonstrated that students from a particular demographic group are more likely to return to serve that population, this is a probabilistic rather than a causal relationship. We encountered very few instances where there was a requirement for a newly-graduated physician from a disadvantaged population to dedicate his or her career to serving others from their community. This somewhat reflects an underlying conceptual dichotomy between individualist and collectivist cultures, and assumptions about the purpose and responsibility of medical education in these different contexts.

Medical schools and medical practitioners, in general, occupy a privileged position in society. This very position, however, can make it difficult to recognize, critique, and make radical changes to the status quo. As Ritz et al. (2014) stated, "we are not inclined to spontaneously criticize the very social structures that form the basis of our comfort" (p. 154). While a few articles in our review acknowledged the power dynamics involved in admissions discourses and practices, it was also notable, from a critical perspective, that the power of medical schools in this regard was rarely considered, let alone examined. This lack of reflexivity or critical positioning served to reinforce underlying assumptions regarding schools' rights and responsibilities to act as gatekeepers to the profession. This was reflected, for instance, in the discourses around "excellence" as an organizing principle for admissions that served to legitimize the approach taken or even to place it beyond criticism.

We also found a further, and troubling, example of unexamined power. When we took a closer look at the 'recruitment from population X in order to provide service to population X' principle using the framework of post-colonial studies, we noted what seemed like the creation of a "subaltern" class (Spivak 1988) in medicine. A subaltern class is made up of individuals who are (reluctantly) allowed into an exclusive institution by hegemonic gatekeepers for particular purposes, in this case, to serve the populations that most established physicians do not want to take on (ibid). By definition, subalterns have little power to influence the policies that affect them and cannot speak, except in the language of the hegemony, which reproduces the power of the privileged elites (ibid). In our review, the minimal discussion of power relations, the paucity of examination of the ideologies and assumptions that are foundational to the social structures of medical schools, as well as the absence of student and community voices in the material, amplified our concerns. Without such critique and reflexivity, efforts to improve social accountability of medical schools may inadvertently sustain and perpetuate the status quo, including societal inequities.

Finally, it was discouraging to see that, after more than four decades of publications about social responsibility, diversity and inclusion, and given the wide range of selections processes, the outcomes of admission to medical school (who is admitted, who is not) do not seemed to have changed significantly. Despite repeated calls, from both individual and more broadly-based organizations to de-emphasize academic performance and to emphasize attributes of future service and nonacademic characteristics (Barzansky et al. 1995; Beltran 2003; Bandiera et al. 2015), there seems to have been little change in the selection process for medical education as a whole. A few schools, particularly those founded with an explicit social mission, have successfully made the change, but the majority would seem to have not, even if they do have a social mission of some kind. This lack of concrete results by medical schools suggests an underlying reluctance to actually change the

status quo. Indeed, by continually asserting that "something should be done", medical institutions give the appearance of progress and reform with the associated benefits of moral/ethical credit and continued self-government, without achieving any substantive change. However, it is also worth reflecting the observation made by Bandiera et al. (2015) that a medical school cannot reasonably be expected to right all of society's wrongs. Equity of opportunity is as much a societal problem as it is a medical school one. While schools need to do more, wider societal change is also required.

Limitations of the review

We note a number of limitations of this study. As with all reviews, our findings are dependent on what has been published in this area and what we were able to find. It was particularly notable that certain schools dominated this discourse, that there were conceptual and axiological differences between schools and countries, and that the literature tended to be more aspirational than experimental in nature. The absence of consistent use of terms and concepts both with respect to admissions (selection, recruitment) and social missions in the papers reviewed and in the key terms used in our searches of bibliographic databases made it difficult to guarantee that all papers of potential relevance to the study were identified. There was a diffuse sense that discourses around social responsibility differ according to context and that this may have limited the comprehensiveness of the review. For instance, the apparent low level of engagement from schools in the United Kingdom may be an artifact of a national admissions process and a focus on principles of 'widening participation' rather than institutional-specific missions. While we are confident that our piloting makes it unlikely that this was a significant flaw in the review, we acknowledge the possibility. Finally, we also recognize that, as a review team from a Canadian school that is trying to connect its social mission with its undergraduate medical admissions processes, we approached this question with a particular perspective that others in other contexts may not have had.

Recommendations for further research

The review suggested a number of issues and directions that should inform future work in this area:

1. The connections between admissions and social missions should be made more explicit, in policy, process, and scholarship in this area, particularly if there is some expectation that admissions should be a mechanism through which a mission is to be realized. This should involve a more explicit and objective consideration of the values and goals of missions and admissions and the alignment (or the absence thereof) between the two.
2. We need to move away from the prevalence of ideological manifestos and purely descriptive studies to explore the connections between admissions and social missions more empirically and systematically. Indeed, the ability to evaluate a social mission is fundamentally dependent on exploring the efficacy of its mechanisms of action.
3. The limiting factors on admissions and the pursuit of social missions should be made more explicit. For instance, what internal conflicting agendas and drivers are there? And in contradistinction, what limits are there to institutional autonomy in terms of external regulation or societal expectations?
4. Given the wide variety of circumstances involved and the ability of those circumstances to shape both missions and admissions, we need to better understand what does and does not work in connecting admissions to a social mission, and in what circumstances and why. This suggests that realist methodologies may be particularly well-aligned with the issues in this space.
5. Finally, we need to see more equity and inclusion in terms of the voices that are being heard in this discursive space. While it is understandable that faculty are the main drivers of academic publishing, the perspectives of applicants and the communities they come from need to be heard, as do the voices of those whose unmet healthcare needs depend on who is admitted to medical school.

Conclusions

Although the literature has many examples of studies into social missions and admissions, the connections between the two are far less common. Moreover, while there are arguments for making these connections, there has been a paucity of action or reporting of outcomes of doing so in a useful transferable manner. It was discouraging to see that after more than four decades of talking about social responsibility of medical schools, the outcomes of admission to medicine do not seem to have substantially changed in that regard. If the social mission is to shape admissions and admissions are to be a mechanism for realizing the social mission, then this needs to be more explicit, as does the focus of the mission and the indicators of success or failure. Indeed, given the implicit connections between the two, we might consider this to be a barometer of whether social missions are any more than political and marketing tools for their institutions. If the commitment to a mission is real and purposive then its translation to admissions and the ability of admissions to respond needs to be more than an aspiration.

Disclosure statement

The authors have no material conflicts of interest to declare with respect to this study. However, as they were trying to connect their social mission with their admission processes they acknowledge that they approached this project from this particular perspective.

Funding

This was an unfunded study.

Notes on contributors

Rachel Ellaway, PhD, is Professor in the Department of Community Health Sciences and Director of the Office of Health and Medical Education Scholarship (OHMES) in the Cumming School of Medicine, at the University of Calgary in Alberta, Canada.

Rebecca Malhi, PhD, is a Research Associate, Distributed Learning and Rural Initiatives (DLRI), in the Cumming School of Medicine, at the University of Calgary in Alberta, Canada.

Sameer Bajaj, BDS, MPH, is a Doctor of Dental Surgery (DDS) candidate at the University of California San Francisco, USA. He was previously a research associate at the Cumming School of Medicine, at the University of Calgary in Alberta, Canada.

Ian Walker, MD, is Clinical Associate Professor in the Department of Emergency Medicine and Director of Admissions in the Cumming School of Medicine, at the University of Calgary in Alberta, Canada

Douglas Myhre, MD, is Professor in the Department of Family Medicine and Associate Dean Distributed Learning and Rural Initiatives (DLRI), in the Cumming School of Medicine, at the University of Calgary in Alberta, Canada.

Glossary

Selection: The process through which a group of applicants are appraised for first, their suitability for a career in medicine, and second, their suitability for entry to a particular program of medicine. Selection ends with the creation of the final ranked list of which suitable students will be offered admission to the medical school.

Recruitment: The collected processes of attracting and persuading individuals to be applicants to a particular medical education program, or to accept an offer of admission once made.

Admission: The longitudinal and largely administrative process that starts with recruitment to an undergraduate medical education program and ends as the admitted students start their training.

Social mission: The values and concepts adopted by a medical school regarding the expression of their social contract. A social mission may involve one or more of being socially responsible, socially accountable, or addressing the social contract.

Socially responsible: A socially responsible medical school is one that is committed to what faculty intuitively considers as the welfare of society. The intention to produce "good practitioners" is based on an implicit identification of society's health needs (Boelen et al. 2012).

Socially accountable: A socially accountable medical school takes specific actions through its education, research and service activities to meet the priority health needs of particular community or population. It also works collaboratively with governments, health service organizations, and the public to positively impact people's health and being able to demonstrate this by providing evidence that its work is relevant, of high quality, equitable, cost-effective (Boelen et al. 2012).

Social contract: Medicine's relationship with society is based on professionalism. This relationship is termed as a social contract (Cruess and Cruess 2008).

Connection between mission and admissions: Bi-directional relationship between a school's social mission and its admissions in terms of how the mission translated to admissions practices, values, and policies, and how admissions acted as a mechanism for realizing the social mission.

References

Arksey H, O'Malley L. 2005. Scoping studies: towards a methodological framework. Int J Soc Res Methodol. 8:19–32.

Bandiera G, Maniate J, Hanson MD, Woods N, Hodges B. 2015. Access and selection: Canadian perspectives on who will be good doctors and how to identify them. Acad Med. 90:946–952.

Barzansky B, Jonas HS, Etzel SI. 1995. Educational programs in US medical schools, 1994–1995. JAMA. 274:716–722.

Bearman M, Dawson P. 2013. Qualitative synthesis and systematic review in health professions education. Med Educ. 47:252–260.

Beltran RA. 2003. Affirmative action in medical school admissions. JAMA. 289:3084–3085.

Boelen C, Woollard R. 2011. Social accountability: the extra leap to excellence for educational institutions. Med Teach. 33:614–619.

Campbell DG, Greacen JH, Giddings PH, Skinner LP. 2011. Regionalisation of general practice training-are we meeting the needs of rural Australia? Med J Aust. 194:S71–S74.

Cappon P, McMurtry R, Parboosingh J, Cruess R, Cruess S, Hawkins D, Hennen B, Grand'Maison P, Kur J, Ling D, et al. 2001. Social accountability: a vision for Canadian Medical Schools. Ottawa, ON: Health Canada.

Cohen JJ. 2003. The consequences of premature abandonment of affirmative action in medical school admissions. JAMA. 289:1143–1149.

Ellaway RH, Bajaj S, Myhre DL, Walker I. 2016. Social Accountability in Medical School Admissions (SAMSA). Dundee, UK: Best Evidence Medical Education. [accessed 2017 June 28]. https://bemecollaboration.org/downloads/2516/Social%20Accountability%20in%20Medical%20School%20Admissions%20(SAMSA)%20FINAL.pdf.

Ellaway RH, Van Roy K, Preston R, Greenhill J, Clithero A, Elsanousi S, Richards J, Labarda C, Graves L, Mammen M, et al. 2017. Translating medical school social missions to student experiences. Medical Education. https://doi.org/10.1111/medu.13417.

Ferguson E, James D, Madeley L. 2002. Factors associated with success in medical school: systematic review of the literature. BMJ. 324:952–957.

Glasser M, Hunsaker M, Sweet K, MacDowell M, Meurer M. 2008. A comprehensive medical education program response to rural primary care needs. Acad Med. 83:952–961.

Grbic D, Jones DJ, Case ST. 2015. The role of socioeconomic status in medical school admissions: validation of a socioeconomic indicator for use in medical school admissions. Acad Med. 90:953–960.

Kirkpatrick D, Kirkpatrick J. 2006. Evaluating training programs. 3rd ed. San Francisco, CA: Berrett-Koehler.

Larkins S, Michielsen K, Iputo J, Elsanousi S, Mammen M, Graves L, Willems S, Cristobal FL, Samson R, Ellaway R, et al. 2015. Impact of selection strategies on representation of underserved populations and intention to practise: international findings. Med Educ. 49:60–72.

Leigh-Hunt N, Stroud L, Murdoch Eaton D, Rudolf M. 2015. A qualitative study of enablers and barriers influencing the incorporation of social accountability values into organisational culture: a perspective from two medical schools. Isr J Health Policy Res. 4:48.

Long T, Smith M, Rose S, Schroeder D. 2015. Diversity of United States medical students by region compared to US census data. Adv Med Educ Pract. 15:367–372.

Moher D, Liberati A, Tetzlaff J, Altman DG; PRISMA Group. 2009. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. Ann Intern Med. 151:264–269.

Mullan F, Chen C, Petterson S, Kolsky G, Spagnola M. 2010. The social mission of medical education: ranking the schools. Ann Intern Med. 152:804–811.

Razack S, Hodges B, Steinert Y, Maguire M. 2015. Seeking inclusion in an exclusive process: discourses of medical school student selection. Med Educ. 49:36–47.

Ritz SA, Beatty K, Ellaway RH. 2014. Accounting for social accountability: Developing critiques of social accountability within medical education. Educ Health. 27:152–157.

Spivak GC. 1988. Can the Subaltern Speak? In: Nelson C, Grossberg L, editors. Marxism and the interpretation of culture. Urbana, IL: University of Illinois Press; p. 271–313.

Steinert Y, Mann K, Centeno A, Dolmans D, Spencer J, Gelula M, Prideaux D. 2006. A systematic review of faculty development initiatives designed to improve teaching effectiveness in medical education: BEME Guide No 8. Med Teach. 28:497–526.

Strasser R, Hogenbirk JC, Minore B, Marsh DC, Berry S, McCready WG, Graves L. 2013. Transforming health professional education through social accountability: Canada's Northern Ontario School of Medicine. Med Teach. 35:490–496.

Witzburg RA, Sondheimer HM. 2013. Holistic review-shaping the medical profession one applicant at a time. N Engl J Med. 368:1565–1567.