

**Prevalence of Medical Humanities Teaching in Medical Schools: Review of Curricula in the United States, Canada, and the United Kingdom**

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**Conflict of Interest Statement**

None of the authors have conflicts of interest related to this study.

**Data Availability Statement**

Complete data for this study is available as a Supporting Information file

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## 23 **Abstract**

### 24 **Rationale and Objectives**

25 Medical humanities are becoming increasingly popular, required, and recognized as  
26 positively impacting medical education and medical practice. However, the extent of medical  
27 humanities teaching in medical schools is largely unknown.

28 We aimed to review medical school curricula in Canada, the UK, and the US. Our secondary  
29 objective was to compare the inclusion of medical humanities in the curricula with rankings  
30 of medical schools.

### 31 **Methods**

32 We searched the curriculum websites of all accredited medical schools in Canada, the UK,  
33 and the US to check which medical humanities topics were taught, and whether they were  
34 mandatory or optional. We then noted rankings both by Times Higher Education and U.S.  
35 News and World Report and calculated the average rank. We formally explored whether  
36 there was an association between average medical school ranking and medical humanities  
37 offerings using Spearman's correlation and inverse variance weighting meta-analysis.

### 38 **Results**

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40 We identified 18 accredited medical school programmes in Canada, 41 in the UK, and 156 in  
41 the US. Of these, 9 (56%) in Canada, 34 (73%) in the UK and 124 (79%) in the US offered at  
42 least one medical humanity that was not ethics. The most common medical humanities were  
43 Unspecified Medical Humanities, History, and Literature (Canada), Sociology and Social  
44 Medicine, Unspecified Medical Humanities, and Art (UK), and Unspecified Medical  
45 Humanities, Literature, and History (US). There was a negative relationship between the  
46 ranking of the medical school and whether they offered medical humanities.

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### 48 **Conclusions**

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50 The extent and content of medical humanities offerings at accredited medical schools in  
51 Canada, the UK, and the US varies. The quality of our analysis was limited by the data  
52 provided on the Universities' curriculum websites. Given the potential for medical  
53 humanities to improve medical education and medical practice, this variation should be  
54 investigated further.

55

### 56 **Keywords**

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58 Medical humanities; medical education; philosophy of medicine; history of medicine;  
59 medical sociology; narrative medicine

## 61 Introduction

62 A growing number of studies have suggested that teaching medical humanities has a range of  
 63 benefits <sup>1 2</sup> including better grades, <sup>3 4</sup> less burnout, <sup>5,6</sup> improved clinical judgment, <sup>7</sup> critical  
 64 appraisal <sup>8</sup> (including about wider problems such as overdiagnosis <sup>9</sup>) better prepared students  
 65 for real life careers in medicine, <sup>10</sup> enhanced medical professionalism, <sup>11</sup> greater empathy, <sup>12</sup>  
 66 and appreciation that patients' problems go beyond their biology. <sup>13</sup> The presence of elective  
 67 courses in humanities is appreciated by medical students. <sup>6,14</sup> Ethics is obviously required,  
 68 since grasping the facts about a clinical case cannot guide action without considering  
 69 patients' values (among other things). <sup>15</sup> Reflecting the increasing importance in humanities,  
 70 the Journal of the American Medical Association introduced a special section 'Introducing  
 71 the Arts and Medicine' to their flagship journal in 2016. <sup>16</sup>

72  
 73 Teaching the medical humanities is now part of the core curriculum in many medical schools.  
 74 For instance, the University of Toronto integrates consistent small-group reflection writing  
 75 sessions, seminars on anti-oppression mediated through discussions of current news and  
 76 social history, and historical backgrounds of medical topics like cancer into content modules.  
 77 Moreover, the university offers many optional and complementary opportunities to integrate  
 78 humanities, such as a health, arts, and humanities diploma program integrating literary  
 79 narratives and art into medical knowledge. <sup>17</sup> In the United Kingdom, King's College London  
 80 has a mandatory series of philosophy lectures, <sup>18</sup> and in the United States, Columbia  
 81 University has a Division of Narrative Medicine which pervades the medical school teaching  
 82 and includes literary theory, philosophy, narrative ethics, and the creative arts. <sup>19</sup>

83  
 84 Given the potential benefits of studying medical humanities, it would be useful to know about  
 85 the extent to which humanities are taught within medical schools. We are aware of one study  
 86 that examined the prevalence of teaching medical humanities in Spain and Italy, <sup>20</sup> but there  
 87 are none in the United States or other English speaking countries. To overcome this gap in  
 88 the literature, we used similar methods to survey whether medical humanities were part of the  
 89 curricula in three English-speaking countries: Canada, the United Kingdom, and the United  
 90 States.

## 92 Objectives

93  
 94 Our primary objective was to survey medical school in Canada, the United Kingdom, and the  
 95 United States to check whether and which medical humanities topics were taught. Our sample  
 96 countries were chosen because they are broadly comparable in terms of language and cultural  
 97 settings. Our secondary objective was to explore the relationship inclusion of medical  
 98 humanities in the curricula medical school ranking.

## 99 Methods

### 100 *Sample*

101  
 102 We replicated the methods from a similar systematic search of medical schools in Spain and  
 103 Italy. <sup>20</sup> Our sample was chosen for convenience and because of the location of the lead  
 104 authors. A future larger study of all medical schools worldwide is planned.

## *Information sources*

We identified accredited medical schools on July 15<sup>th</sup> 2020 using Maclean's (Canada),<sup>21</sup> the Medical Schools Council (United Kingdom),<sup>22</sup> and the American Association of Medical Colleges and the American Association of Colleges of Osteopathic Medicine (United States).<sup>23</sup> The information on the medical curricula of each medical school was obtained from their institutional curriculum websites on the Internet. Again, following methods used in a previous survey, we considered humanities in a broad sense, which will include literature, visual arts, performing arts, philosophy, anthropology, history, and sociology. Where the same university offered more than one medical school programme (usually: an undergraduate and graduate programme in the UK), we included the one that was most comparable to the others in that country (usually: the undergraduate programme in the UK).

## *Eligibility criteria*

To count as having included medical humanities, the curriculum website had to specify that there was a course (either optional or mandatory). It did not suffice to claim, for example, that cultural competence was a desired learning outcome—it had to be specified in the curriculum that a medical humanity was taught in order to achieve the outcome.

## *Data items*

Two authors for each country extracted the following data from the curricula website, where available: presence of subjects in humanities in the curriculum; whether the following specific medical humanities were taught (anthropology, history, language studies, literature, music, philosophy, religion and theology, sociology, visual arts, and 'other'); number of credits; academic consideration (compulsory or elective); academic year of the curriculum where the subject is offered (1st to 6th); syllabus (presence or absence); ranking of the Medical School (see below).

We did not classify communication skills or foreign languages as humanities for the purposes of this study. This was to remain comparable with the previous study of medical humanities in Spain and Italy. We did not classify population health, or social determinants of health as humanities, because they are social sciences. However, if the website classified sociology or medical sociology as a humanity, then we included it as such. This was to be charitable as they might have included components of more traditionally humanities topics in those.

Within the UK, we did not classify Intercolated Degrees in the Medical Humanities as medical humanities courses. This is because intercalated degrees are additional, separate, degrees. We classified courses as compulsory even if they were sub-parts of other compulsory courses.

## *Obtaining an average rank*

We used two rankings for medical schools: the Times Higher Education in the 'clinical, pre-clinical, and health':<sup>24</sup> and the U.S. News and World Report (USNWR) ranking.<sup>25</sup> For both ranking systems, we are extracting data both for the within country ranking and the worldwide ranking. By using a UK-based and a US-based ranking system we aimed to overcome potential bias that the country producing the ranking system viewed its own medical schools as superior. For example, it may not have been an accident that the UK-

based Times Higher Education system ranked Oxford as the best medical school in the world while the USNWR ranked Harvard as the best medical school in the world.

To combine the rankings, we took the average rank. This was problematic for the schools that were listed in one of the systems but not the other. To overcome the problem, we assigned a rank to the unranked school based on its relative position in the system for which it was ranked. For example, in the US, Times Higher Education ranked 107 schools, and USNWR ranked 109. Say a school was ranked 51<sup>st</sup> by the former but not ranked by the latter. We would then assign it a rank of  $(51/109)107=49$ . Schools that were ranked by neither system were not included in any of our analyses related to rankings.

### *Analysis*

We reported whether there was at least one humanities course taught *other than* ethics as a compulsory (as opposed to optional) subject. This was because there was no consistent way of determining whether optional medical humanities were taken up by any students. We reported whether at least one medical humanity (other than ethics) was taught, whether it was mandatory, and the total number of medical humanities offered (mandatory or not).

We reported the rankings and explored whether there was a relationship between the ranking of the medical school programmes and whether they offered medical humanities. We did this in two ways. First, we explored whether there was a relationship between the quantity (mandatory or not) of medical humanities and the average world ranking using Spearman's rank correlation by each country and for all countries combined. Second, we divided schools into those that mandated medical humanities (other than ethics) and those that did not, and compared the mean ranking between the two groups by individual country and also combined by a weighted average approach with inverse variance weighting meta-analysis. We did not include schools that were not ranked by either system in this analysis.

### **Results**

We were able to obtain data from 18 medical school programmes in Canada, 46 in the United Kingdom, and 156 in the United States. Of these, 17 in Canada, 40 in the United Kingdom, and 166 in the United States were ranked by at least one ranking system.

All our data was obtained from the websites. All the medical schools in Canada, all but 9 in the United Kingdom, and all but 19 in the United States claimed to offer medical ethics as part of the curriculum.

Excluding medical ethics, nine Canadian medical schools (56%) offered at least one medical humanity with 6 of these (33%) having the medical humanity as compulsory. Of the 34 UK, 30 (73%) offered at least one medical humanity and 5 (12%) had a medical humanity that was compulsory. 124 (79%) US schools offered at least one medical humanity with 57 (37%) of these having the medical humanity as compulsory.

The most common medical humanities (see Table 2) were Unspecified Medical Humanities, History, and Literature (Canada), Sociology and Social Medicine, Unspecified Medical Humanities, and Art (UK), and Unspecified Medical Humanities, Literature, and History (US). There was/was not a relationship between the ranking of the medical school and whether they offered medical humanities.

All the schools in Canada and the UK were ranked by at least one ranking system, however 38 programmes in the US were not ranked by either.

[Table 1 about here]

[Table 2 about here]

We also found a weak statistically significant negative correlation with a trend for the average rank to be lower as the number of medical humanities topics offered increased ( $r = -0.18$ ,  $p = 0.02$ ), see Figure 1, which was consistent in direction within country; UK schools ( $r = -0.11$ ,  $p = 0.48$ ), Canadian schools ( $r = -0.26$ ,  $p = 0.31$ ), US schools ( $r = -0.25$ ,  $p = 0.007$ ). When we compared medical schools that had at least one medical humanity that was compulsory with those that did not list a compulsory medical humanity, we found that schools with compulsory medical humanity topic were on average 87.6 points (95% CI -123.6 to -51.6,  $p < 0.0001$ ) lower than schools that did not list a compulsory medical humanity (see Figure 2).

[Figure 1 about here]

[Figure 2 about here]

## Discussion

### *Summary of findings and implications for research and practice*

Three quarters of the medical schools in the United States and the United Kingdom offered at least one medical humanity, and half of those Canada did so. A third of the medical schools in the United States and Canada had compulsory medical humanities, and just over 10% of the medical schools in the UK mandated at least one medical humanity. Three medical humanities topics featured in the top 10 most common in all three countries: history, literature/narrative medicine, and art.

Contrary to what we anticipated, there was an association between lower ranked schools and quantity of medical humanities (and whether the medical humanities were compulsory). This association is unlikely to be causal for a number of reasons, including a common cause. The higher-ranked medical schools may not feel the need to bolster their curricula with topics they believe (for better or worse) are not essential. Relatedly, the higher-ranked schools may not feel pressure to innovate and be steeped in tradition that makes curricular innovations difficult. The lower-ranked schools, by contrast, are often newer and could be more sensitive to the need to innovate or improve. It will be interesting to see whether this changes when teaching medical humanities becomes compulsory. Addressing this potential imbalance in medical humanities could be achieved if funding bodies invested in medical humanities for medical schools. This is likely to be cost-effective as teaching medical humanities rarely requires equipment, and humanities teachers are rarely on (higher) clinical salaries.

Given the growing importance of teaching medical humanities, we propose that medical schools communicate their humanities offerings clearly on their curriculum websites. We also recommend that future research to investigate the *effects* of offering medical humanities, for example on burnout, subsequent medico-legal complaints, and effectiveness of practice

(measured, for example, by patient satisfaction, which is a determinant of outcomes<sup>26,27</sup>). At least in principle, there could also be harms, for example by taking away students' attention from the basic science of medicine. It may also involve additional costs, although, as mentioned above, these are likely to be minimal. Related to the potential cost, future research should investigate the most efficient ways to introduce medical humanities to medical school curricula in ways that enhances rather than interferes with the other competing and necessary topics.

### *Limitations*

The main limitation of our study was that we used the university medical school curriculum websites as our main sources, whereas the information on the website may not reflect what is actually taught. For example, Queens University (Canada) does not list medical humanities on their curriculum website (apart from ethics). Yet we are aware through the effort of their previous Chair of History of Medicine that Queens integrates mandatory history of medicine lectures into various curriculum segments.<sup>28</sup> Gathering information from the website also made it difficult to know whether the humanities listed as being taught were taught in a superficial (for example as a one-off, short lecture) or deeper way (for example as a series of lectures).<sup>7</sup> However, it is important for medical schools to inform potential applicants about what they offer; given the importance of websites for providing this information, we believe that it was not unreasonable to look at the curriculum websites. Another limitation was that we used a convenience sample, albeit one that provides a useful basis for comparison due to shared culture and language. Yet another limitation was that the ranking systems were blunt tools for rating the quality of medical schools, as evidenced by the differences between the two ranking systems we used. Our averaging of the rankings mitigated this limitation to some degree. Finally, we did not investigate the relationship between specific medical humanities and the school rankings. This would be an appropriate question for future studies of the effects of teaching medical humanities to medical students to examine.

### *Conclusion*

According to what they report on their curriculum websites, medical humanities are commonly offered in medical schools, at least as an option, especially among highly ranked medical schools. Future research should investigate the effects of teaching medical humanities to medical students, and which medical humanities topics are most appreciated, appropriate, and effective.

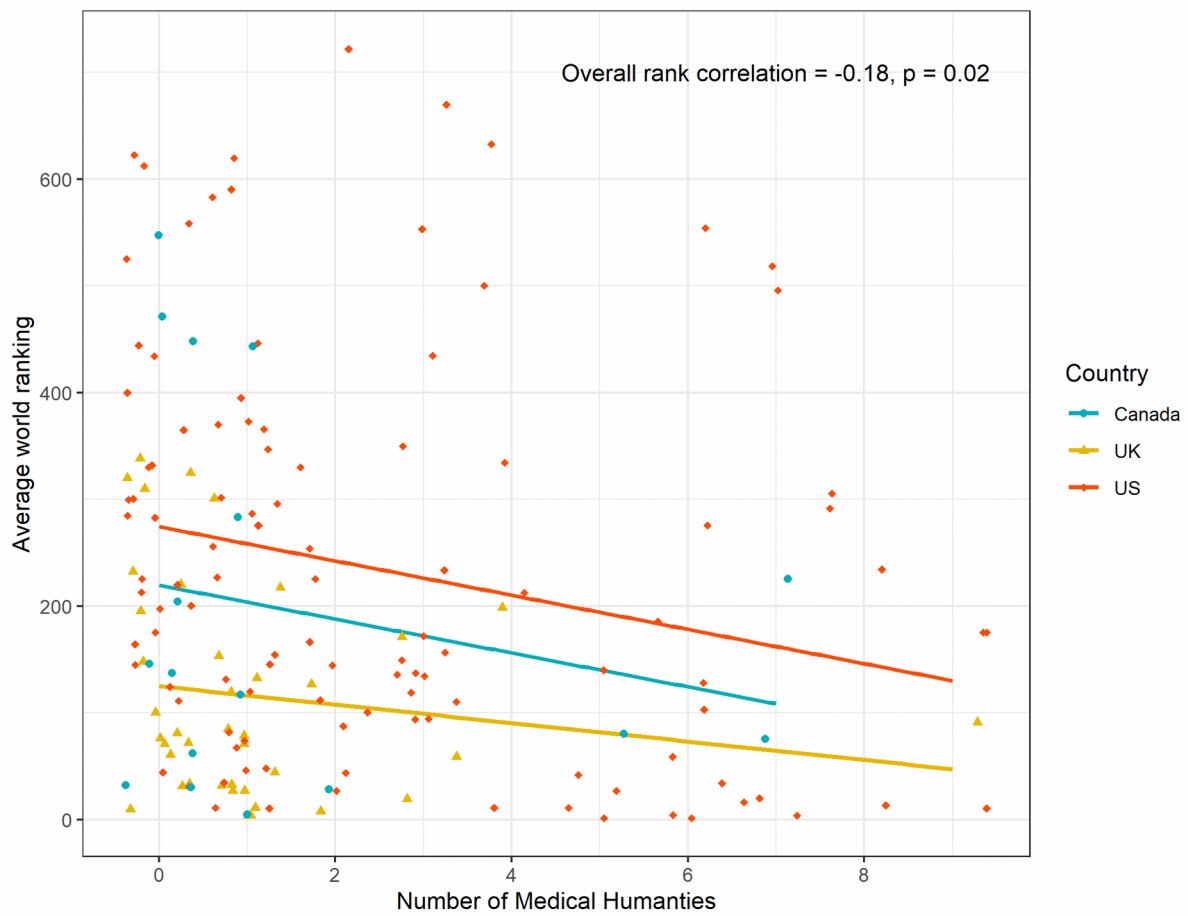
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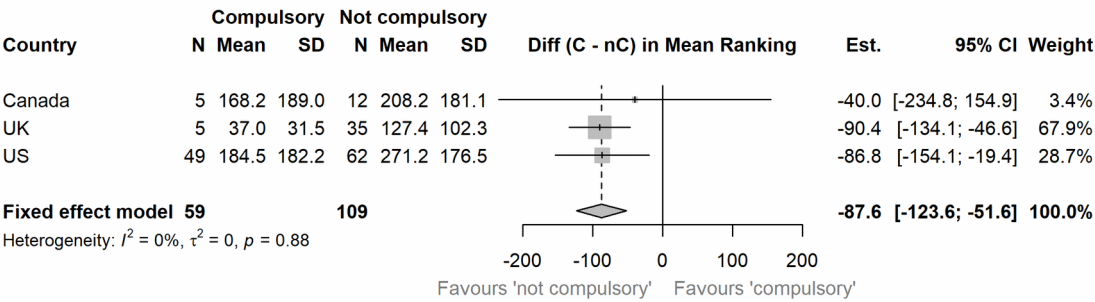


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**Figure 1. Association between average world ranking and number of medical humanities offered**



364 **Figure 2. Difference in mean ranking between schools that had one (non-ethics)**  
 365 **compulsory medical humanity and those that did not**



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