Public health engagement interest and self-perceived preparedness of senior year Canadian medical students

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Abstract

Background: For years, focus has been placed on improving the social determinants of health to improve population health. However, more recently there have been greater efforts instituted surrounding physician involvement in public health efforts through advocacy, collaboration, and research. There are several efforts that have been implemented to induce pre-medical students', medical students' and physicians' competencies/interests in public health areas.

Question: Are senior year students of Canadian medical schools interested and feeling prepared to get involved with public health initiatives/efforts as physicians?

Method: An exploratory study was carried out that involved surveying senior year medical students of Canadian medical schools. Survey was disseminated by the UGME offices and CFMS representatives of participating schools. Descriptive statistics were used to present the survey results.

Results: The respondents are interested in public health engagement beyond the clinic. They see public health as an important part of the medical school curriculum and agree that physicians have a responsibility to put forth efforts in the area. A large majority of the respondents, 73%, plan to engage in public health efforts beyond clinical practice as a physician.

Conclusion: There is a discrepancy of respondent's current involvement in public health engagement and their interest and future plans to engage. Respondents have a higher interest in public health compared to their self-perceived preparedness. Schools need to focus more on how students can get involved in public health initiatives as physicians. The next steps in this area of research must look to get a larger pool of evidence from medical students, investigate physician thoughts on the topic and engagement in public health.

Introduction

Increasingly, we are learning and understanding how the social determinants of health affect individuals, communities, and societal health.[1] In 2013, the Canadian Medical Association carried out wide-ranging consultations to gather input from Canadians on the social determinants of health. The response of these consultations concluded that governments and health care providers should be working to improve income, housing, nutrition and food security, and early childhood development issues within Canada.[1] This is not new information; for years, focus has been placed on improving the social determinants of health to improve population health. However, more recently there have been greater efforts instituted surrounding physician involvement in public health efforts through advocacy, collaboration, and research.[2-4] In 2006, the Public Health Task Group, Association of Faculties of Medicine of Canada stated: "All physicians graduating from Canadian Faculties of Medicine should be able to practice medicine with the concepts of public health as key elements in their day-to day activities (this could apply to the community in which they work and/or their practice population), and see themselves as a key component of the public health system."[2] This demonstrates the promotion and support exhibited by prominent medical associations on the necessity of public health practices within the medical field. Events such as the Global Symposium on the Role of Physicians and National Medical Associations in Addressing Health Equity and the Social Determinant's of Health in 2015, is another example of recent interest in this topic. The symposium showcased more than 25 speakers from 17 different countries, including Canada, the United States, Australia, Zambia, Trinidad and Tobago, Finland, Myanmar and many others.[5]

The CanMED roles have also extended the role of the physician beyond their personal practice to encompass a more population-based view. Within the role of the 'Health Advocate',

physicians are expected to advocate for social change, justice, and improvements that indirectly and/or directly improve their patients and the population's health.[6] This role of 'Health Advocate' has been collapsed to fit into two categories through the work of Sarah Dobson and colleagues. The first category – that of 'agency' – entails working on behalf of the interests of a specific patient, while the second category – that of 'activism' – is directed toward changing social conditions that impact health, and the effects of which are observed in populations more than in individuals. The difference, they say is that, "whereas agency is about *working the system*, engaging in activism is about *changing the system*".[7] As we know, physicians are perceived to be a credible source of information, giving them a certain level of influence potential. This, in-turn, gives them the ability, and possibly the responsibility, to be agents of change for the betterment of society.[8]

There are several efforts that have been implemented to induce pre-medical students', medical students' and physicians' competencies/interests in public health areas. Some of these include: accepting well rounded/balanced applicants, public health integration into the medical undergraduate curriculum, the advancement of one year Master of Public Health programs, joint MD/MPH programs, and short-term courses/programs during residency, etc…[9,10] However, there is a lack of studies on the efficacy of these programs in promoting efforts beyond the clinic (e.g. affecting the broader population).

The purpose of this study is to investigate how senior year medical students of Canadian medical schools feel towards public health topics, the role of the physician in public health efforts, and whether or not they feel prepared after their undergraduate medical training to engage in such efforts in their future. Additionally, results may expose variables that lead to higher interest and preparedness for engagement. This will be a largely explorative investigation to see how the

relatively recent increase in focus of public health topics and integration into curriculums is impacting medical students across Canada.

Research Question

Are senior year students of Canadian medical schools interested and feeling prepared to get involved with public health initiatives/efforts as physicians?

Methodology/Method

Study design: Exploratory Survey. The exploratory survey design was chosen after completing a literature review and concluding that all the Canadian studies in this area over the past 10 years have been focused on one program or one elective. The broad reaching survey gives better look at the current climate of the Canadian medical students' attitudes on the subject matter.

Study population: Senior year students of participating Canadian medical schools. The reason senior year medical students were chosen is because they are the closest to being physicians and closest to having just completed their undergraduate medical training.

Data collection: Survey was disseminated to medical students of each participating Canadian medical school by each schools UGME office or Canadian Federation of Medical Students (CFMS) representative. Survey was developed on and completed using QuestionPro. The survey was reviewed by my supervisor and a faculty member of MUN medicine and the community health and humanities department.

Data analysis: Descriptive statistics are the only form of data analysis. Performing correlation analysis or variance with such a small sample size would have little power and possibly result in "p-value fishing".

Results

A total of 138 students opened the survey link, 80 started the survey, and 18 dropped out, leaving 62 to have completed the survey. The average time taken to complete the survey was 4 minutes.

Please note, the data presented in this results section does not include all the information that was collected in the survey. The information that has been excluded from this report is education prior to medical school, area of medicine of interest, methods of public health education respondents received during their medical training, and whether they took electives in public health. These topics were excluded because they were originally going to be used for correlation analysis which were not performed. Participants that did not fully complete the survey were also excluded.

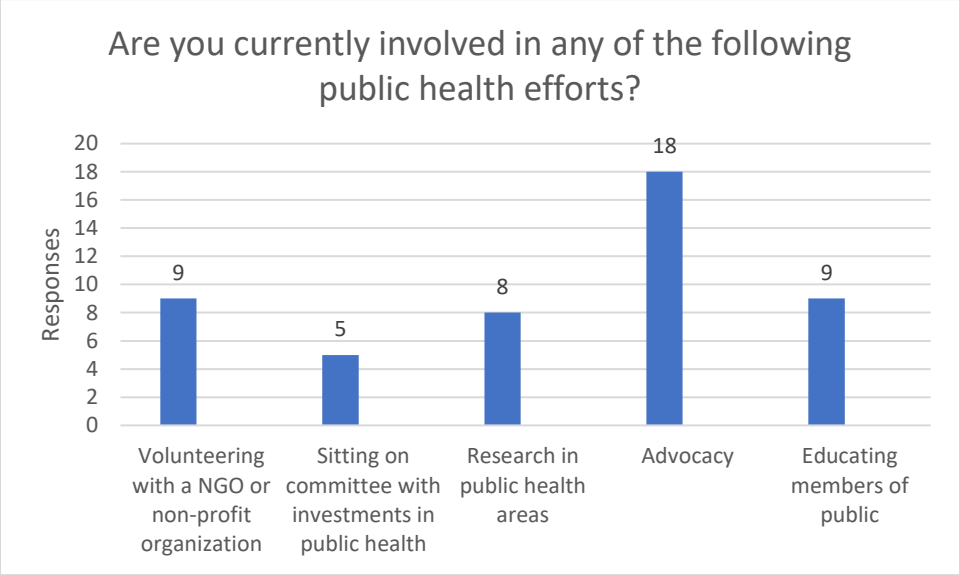
Table 1.

Demographics:	**N(%)**
Age (years)	
25-29	51(82)
30-34	8(13)
35+	3(5)
Gender	
Male	18(29)
Female	44(71)
Community population	
<1000 people	4(6.4)
1000-29999 people	13(21)
30000- 99999 people	11(17.6)
100000+ people	34(55)
Medical School	
MUN	11(17.7)
Ottawa	7(11.3)
NOSM	14(22.7)
BC	2(3.2)
TO	15(24.2)
Queens	1(1.6)

McMaster	1(1.6)
Western	11(17.7)

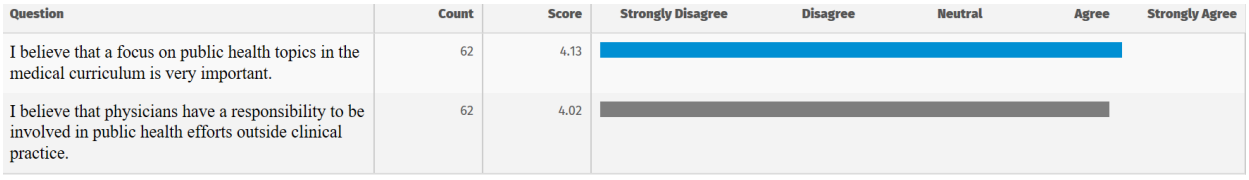
Age: The age group with the highest response rate was 25 to 29 years old, which made up 82% of total responses. According to the Association of Faculties of Medicine in Canada data on class enrollments of Canadian Medical schools in the year 2014, most students were 20 to 25 years old.[11] Therefore, the higher response in the age group 25 to 29 years old is likely attributable to class demographics of senior year medical students. Gender: Females made up 71% of total responses, which again is likely attributable to the class demographics of the senior year medical students. In 2014, females made up 57.7% of the first-year students of Canadian medical schools.[11] Community population: This represents the size of the community that the respondent spent most of their developing years, the majority, 55%, came from cities of greater than 100000 persons. Medical School: 8 of the 14 medical schools approached to participate in the survey agreed to disseminate the survey to their senior year medical students. The response rates from the schools that were approached were quite low as is evident in Table 1.

Figure 1.



Respondents were asked to select which of the public health efforts they are currently involved in from a list provided. The most selected was 'Advocacy' with 18/62 being involved, followed by 'Volunteering with a NGO or non-profit organization' and 'Educating members of the public' with 9/62 being involved in each. The list provided was made not to be exhaustive and the activities were left quite broad in hopes students would be able to match something they do into the options. With that said, the number of respondents selecting each item was quite low. One distinction that should have been made was that 'Advocacy' was referring to advocacy outside the clinic setting, respondents may have perceived it as advocacy for a patient in clinic or hospital setting.

Figure 2.



Question	Count	Score	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I believe that a focus on public health topics in the medical curriculum is very important.	62	4.13					
I believe that physicians have a responsibility to be involved in public health efforts outside clinical practice.	62	4.02					

Respondents were asked to rate how strongly they agree with the statement: “I believe that a focus on public health topics in the medical curriculum is very important”. The average response was very encouraging with an average score of 4.13 ± 0.155828 at 95% CI on a 5 point Likert scale. This agreeance is supported by the level of interest respondents report having based on the scores received in the interest in Table 3.

This statement was followed by: “I believe that physicians have a responsibility to be involved in public health efforts outside clinical practice”. Again, the average response rate was agreeable with an average score of 4.02 ± 0.18099 at 95% CI on a 5 point Likert scale.

Table 2.

I am well prepared to (see public health efforts below) beyond clinical practice in my future	Preparedness score: 1(strongly disagree) - 5(strongly agree)
Advocate for social change	3.74 ± 0.17, 95% CI
Advocate for system and legislative change	3.24 ± 0.23, 95% CI
Engage/create partnerships with policy-makers	3.34 ± 0.21, 95% CI
Volunteer for NGO or not-for-profit organization	4.13 ± 0.21, 95% CI
Engage/create partnerships with community agencies	3.82 ± 0.19, 95% CI
Conduct research, assessment, and analysis focused on population health	3.52 ± 0.24, 95% CI
Engage in knowledge translation focused on public health	3.71 ± 0.24, 95% CI
Be involved in public health policy implementation and evaluation	3.30 ± 0.22, 95% CI
Be a medical advisor for a governmental organization	2.84 ± 0.27, 95% CI
Be a board member of an NGO or not-for-profit organization	3.35 ± 0.26, 95% CI
Engage/create partnerships with government members	3.21 ± 0.23, 95% CI
Educate and empower the public/community (health promotion/health protection)	4.06 ± 0.18, 95% CI
Assume a leadership role in public health capacity	3.39 ± 0.22, 95% CI

Respondents were asked to rate how much they agree that they are prepared to be involved in a variety of public health areas. The 3 highest rated were ‘Volunteer for NGO or not-for-profit organization’, ‘Educate and empower the public/community’, and ‘Engage/create partnerships with community agencies’ with a scores of 4.13 ± 0.21, 95% CI, 4.06 ± 0.18, 95% CI, and 3.82 ± 0.19, 95% CI respectively. The 3 lowest rated were ‘Be a medical advisor for a government organization’, ‘Engage/create partnerships with government members’, and ‘Advocate for system and legislative change’ with a scores of 2.84 ± 0.27, 95% CI, 3.21 ± 0.23, 95% CI, 3.24 ± 0.23, 95% CI respectively. From these results it appears respondents are prepared to disseminate their medical knowledge rather than use public health knowledge and skills. There also seems to be low preparedness when it comes to working with higher level activities including government and policy.

Table 3

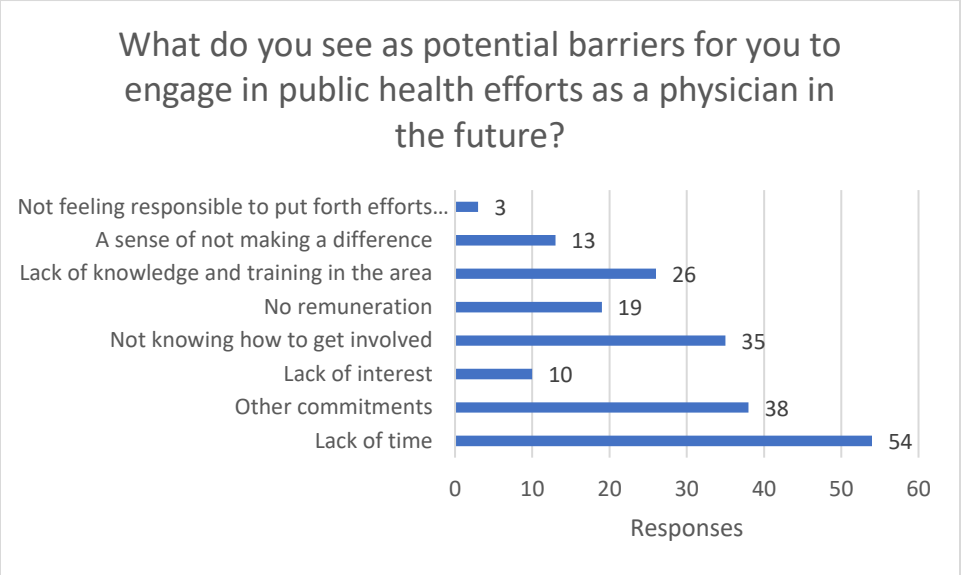
I am interested in (public health efforts below) beyond clinical practice in your future:	Interest score: 1(strongly disagree) - 5(strongly agree)
Advocating for social change	4.21 ± 0.13, 95% CI
Advocating for system and legislative change	3.79 ± 0.26, 95% CI
Engaging/creating partnerships with policy-makers	3.52 ± 0.25, 95% CI
Volunteering for NGO or not-for-profit organization	4.0 ± 0.22, 95% CI
Engaging/creating partnerships with community agencies	4.03 ± 0.18, 95% CI
Conducting research, assessment, and analysis focused on population health	3.39 ± 0.24, 95% CI
Engaging in knowledge translation focused on public health	3.89 ± 0.24, 95% CI
Being involved in public health policy implementation and evaluation	3.44 ± 0.25, 95% CI
Being a medical advisor for a governmental organization	3.11 ± 0.28, 95% CI
Being a board member of an NGO or not-for-profit organization	3.41 ± 0.28, 95% CI
Engaging/creating partnerships with government members	3.20 ± 0.28, 95% CI
Educating and empowering the public/community (health promotion/health protection)	4.20 ± 0.18, 95% CI
Assuming a leadership role in public health capacity	3.64 ± 0.25, 95% CI

Respondents were asked to rate how much they agree that they are interested in being involved in a variety of public health areas. The 3 highest rated were ‘Advocating for social change’, ‘Educating and empowering the public’, and ‘Engaging/creating relationships with community

organizations' with scores of 4.21 ± 0.13, 95% CI, 4.20 ± 0.18, 95% CI, and 4.03 ± 0.18, 95% CI respectively. The 3 lowest rated were 'Being a medical advisor for a governmental organization', 'Engaging/creating partnerships with government members', and 'Conducting research, assessment, and analysis focused on public health' with scores of 3.11 ± 0.28, 95% CI, 3.20 ± 0.28, 95% CI, and 3.39 ± 0.24, 95% CI respectively.

Based on the results of the Table 2 and Table 3 it appears that the respondents have an overall greater interest in public health activities when compared to their preparedness. There is a clear pattern that students ranked lower in any activity that has to do with government focus, and system or policy level activities. Some possible reasons for this could include respondents thinking there is a greater amount of time is needed to allocate to these areas, a potential for more accountability, greater commitment, slower change, and/or these areas should be handled by professionals in the specific field. This is important because effort in these higher levels can have large public health impact and social change, which is the highest rated area of interest, 'Advocacy for social change', by the respondents in Table 3.

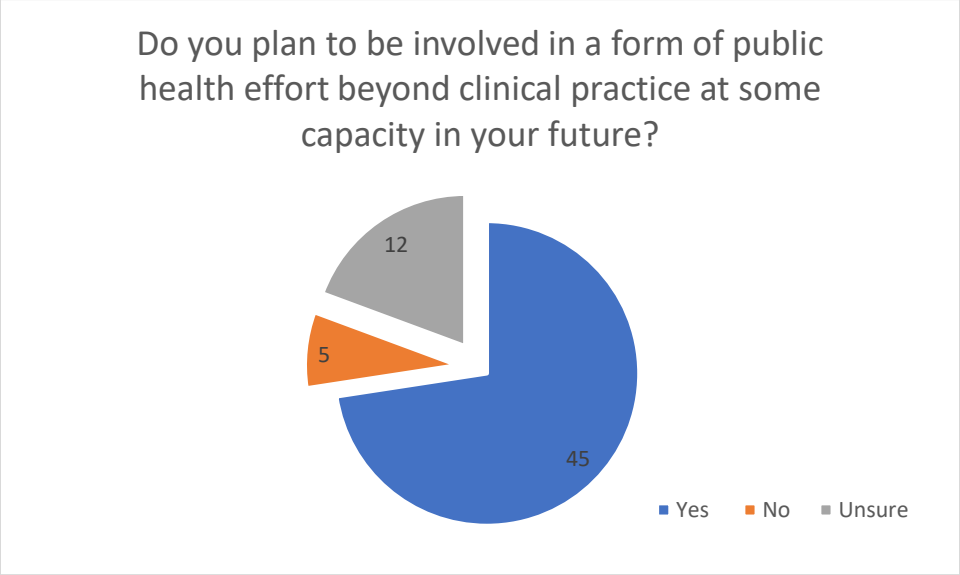
Figure 3.



The respondents were given a list of options that could be barriers to them engaging in public health efforts as physicians. The highest selected item in the list was ‘Lack of time’ with 54/62 selecting it. This was followed by ‘Other commitments’ with 38/62, ‘Not knowing how to get involved’ with 35/62, ‘Lack of knowledge and training in the area’ with 26/62, and ‘No remuneration’ with 19/62. The more negative options including ‘Sense of not making a difference’, ‘Lack of interest’, and ‘Not feeling responsible to put forth efforts in the area’ were all the least selected with 13/62, 10/62, and 3/62 respectively.

The ‘Lack of time’ will always be an issue and a barrier to involvement in anything outside clinical practice. However, the important points here are that the other top selected barriers are related to the education the students are receiving in their medical curriculum. This is important because nearly 50% of respondents say they do not know how to get involved in public health engagement, and slightly over 40% also suggest they lack the knowledge and training in the area. Which is in line with the lower responses to how prepared they feel Table 2.

Figure 5.



A large majority of respondents said they plan to be involved in public health efforts beyond the clinic in their future. Out of the 62 respondents, 73% said they plan to, 19% were unsure, and only 8% said they have no plans to be involved.

This is a very encouraging response, however, there is a discrepancy between how many of the respondents are currently involved in public health efforts (Figure 1). It could be argued that senior year medical students are too busy to be involved in these efforts, but the highest ranked barrier to engagement in their future as physicians is still 'Lack of time' (Figure 3). One thing that differs significantly between a senior medical school student and a practicing physician is location and stability. Students are constantly changing location and activities, which makes it difficult to be involved in many forms of public health engagement, this could account for the low involvement the respondents currently reported. Nevertheless, a difficult area is lack of time and the question remains, how/when does the sense of responsibility to be involved in public health engagement (Figure 2) win over the already busy schedule and lack of time.

Limitations

The survey received a low response rate, has the potential for sampling bias in which students with high interest in the public health area may be overrepresented, and response bias in which respondents may have responded in what would appear more socially acceptable. To increase response rate an incentive should have been offered for completion of the survey. This could have increased response rate and encouraged those without a vested interest in public health to complete the survey. Having one main body to disseminate the survey would have been more efficient and ensured the survey reached all senior medical students of Canadian medical schools. Reaching out to the all the UGME offices and CFMS representatives made it difficult know exactly how the survey was disseminated and how many times. Survey timing could have been better organized, the time that most schools sent the survey out was during the time that senior year students would have been busy studying for the MCCEE or busy travelling from one location to another starting new electives. Finally, the study did not investigate long term public health engagement by the students once they are physicians, which is an ongoing gap in this area of research.

Conclusion

Based on the survey results, the respondents are interested in public health engagement beyond the clinic (Table 3). They see public health as an important part of the medical school curriculum and agree that physicians have a responsibility to put forth efforts in the area (Figure 2). The preparedness (Table 2) of the respondents to engage in different forms of public health engagement was lower on average compared to their interest (Table 3). A large majority of the respondents, 73%, plan to engage in public health efforts beyond clinical practice as a physician (Figure 5). The number one barrier the respondents see to participating in public health efforts as

a physician is time restraints (Figure 3). However, two of the other highest ranked barriers have to do with their education in the area, including knowledge and knowing how to get involved (Figure 3). Therefore, with the high interest in public health engagement, there is a need to focus medical school curriculums on teaching medical students how to get more involved in public health activities beyond the clinic. Of course, it is important to remember that the responses to this survey could have likely been affected by biases, it is a small sample and not representative of the entirety of the senior year medical students of Canadian medical schools, and responses to the survey do not translate into the respondents' actual future actions and attitudes.

The next steps in this area of research must be to create a larger pool of evidence so that universities can compare results of programs/curricula and help each other advance as efficiently as possible. There must also be research into understanding the contradictory gap between students endorsing public health actions and their engagement. One feasible solution would be to survey current physicians across Canada with the aim of understanding their levels of engagement, their attitudes toward the topic, their past education in public health, and their perspective on improving medical education in this area. Another option is to perform a longitudinal study of a population of medical students through their training and years into their practice as a physician.

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