**The making of a ‘Citizen Doctor’: Can value-based classes in Environmental Science and Constitution of India impact medical student formation?**

Authors: Radhika Hegde2, Manjulika Vaz 1.

1 Health and Humanities, St John’s Research Institute, 2 Department of History of Medicine, St. John’s Medical College, Bangalore 560034, India.

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Correspondence to:

Radhika Hegde

St John’s Medical College

Department of History of Medicine

Bangalore- 560034

09632172577

Radhika.h@sjri.res.in

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**Abstract**

In 2018, the Division of Health and Humanities at St John’s Research Institute introduced the ‘Citizen Doctor’ course for first year medical students at St. John’s Medical College. The focus was to expose future doctors to the wider framework of health and invoke a sense of citizenship, responsiveness and critical thinking. Classes in Environmental sciences and the Constitution of India, advocated as beneficial for all undergraduate students in India, were used as the basis to design the Citizen Doctor course. This paper is an evaluation of this innovation. A structured feedback questionnaire was administered to students at the end of the course; an overwhelming majority found that these classes helped them identify and understand contemporary social and environmental issues. It evoked a sense of wider responsibility and responsiveness, thus laying the foundation for a ‘Citizen Doctor’. The evidence suggests that this course continues, expands to other years and other medical colleges

**Key Words**

**Citizen, Humanities, Environmental Science, Constitution of India, Social determinants of health, Medical education**

**Introduction**

Medical education in India has traditionally focused on providing technical expertise to doctors. The logical inquiry- based learning of *asking more to understand more* is quintessentially absent in our medical education today (1). Concerns have been raised about the lack of sensitivity and compassion of young medical doctors in India due to excessive stress on objectivity (2) triggering a discussion on the inclusion of humanities in the medical curriculum (3), so that they can better serve the wider social needs of the underserved in rural areas (4) (5). The Bhore-Committee in 1947 emphasized the need to develop the social character of the physician: “protecting the people and guiding them to a healthier and happier life”(6).

The success of a democracy depends on its active citizenship. A proactive citizen engages in debate, participates in the legislative processes and encourages the disempowered to be a part of the democratic structures in order to promote inclusion (7). As Haberman notes, “the institutions of constitutional freedom are only worth as much as a population makes of them” (8). While attempting to address public health needs, doctors need to realize that they are an integral part of society and the environment in which they live. In a hugely diverse and disparate country like India, doctors because of their privileged role in society are uniquely placed to play a prominent public role. Specific actions that doctors can undertake include promoting a cleaner and healthier environment, addressing the social determinants of health, and being advocates for social justice and better health laws. In order to do this, however, doctors need to see their role evolving from a doctor to that of a responsive citizen-doctor.

Rapid economic and technological progress has fueled economic growth but has also led to ecological disturbances and has widened social inequalities. It is only through environmental education that pro-environmental behavioral changes can be brought about (9). An understanding of environmental issues will enable medical students in adopting values and goals to engage as citizens in crucial issues related to the environment. This is all the more important if medical students are to value the social determinants of health, of which environmental/ecological issue are an important part.

Studies have shown that incorporating interdisciplinary knowledge and the use of pedagogic methodology like reflection in medical education improves critical thinking and diagnostic reasoning of complex and unusual clinical cases (10) (11). At St. John’s Medical College, Bangalore, there are 20 hours devoted to Environmental Science (ES) and the Constitution of India (CoI) for first year MBBS students. Although not a part of the formal medical curriculum, these subjects have been advocated for first year undergraduate university students (12) (13). In 2018, the Division of Health and Humanities redesigned these classes as the ‘Citizen Doctor’ course. Although, there is an ongoing discussion in India on educating future doctors to be more socially responsible citizens, there is little attempt in making professional and civic duties of the doctor complimentary to one another. The ‘Citizen Doctor’ course is unique to St Johns Medical College. It was designed with a purposeful shift from providing knowledge to inspiring and initiating responsiveness and critical thinking among medical students. The Citizen-Doctor fosters the idea of a “Civic-Minded Professional” (14) in which the professional duties of the doctor and his civic responsibilities are interrelated. Political theorist Iris Marion Young in her treatise ‘Justice and the Politics of Difference’ (15) decries the reduction of social justice and suggests inclusive, participatory ways of bringing about change in society. She brings to the fore the idea of ‘differentiated citizenship’ where individuals can be segregated and considered different due to their social and locational grouping, but where the critical requirement is to recognize the value of responding to the needs of society and being ‘together in difference’ (16).

Exposing students to the Citizen Doctor classes in the first year of medicine is ideal, as they have unbiased minds as well as the curiosity to learn. The classes were structured around two core values:

1. The importance of human rights, human dignity, public advocacy and solidarity with social issues and marginalised people.
2. A sense of responsibility for one’s action and a sense of responsiveness to inter-connected problems.

This paper evaluates the ‘Citizen Doctor’ course through feedback received from the medical students.

**Methods**

The study was conducted in a private Catholic Minority Medical College in Bengaluru City, Karnataka, which has a specific mission to train doctors to work in underserved areas. The majority of the students are Catholic, including 20 religious nuns. Students are drawn from various states, including 30 students from states of particular health need in North and Northeast India. A little less than 2/3 of the students in the last three years are women. Every year, first year students attend Constitution of India and Environmental Classes mandated by the Rajiv Gandhi University of Health Sciences. Students also go through a compulsory Ethics training course throughout their medical education (17).

The Environment Science (ES) course of the Citizen Doctor course covered topics ranging from climate change – including causes and consequences, globalization, consumption and garbage management, sustainable lifestyles, and its impact on health, to specific issues such as water bodies and their conservation, and air pollution and its mitigation. A central value focus in these classes was “Am I responsible? Can I make a difference?” Table 1 provides the structure of the ES course. There were seven contact classes, two classes involving fieldwork, and one class for presentations.

The Constitution of India(CoI) classes were embedded in the understanding of the role of a Citizen- Doctor and the civic responsibility towards the community and the state. The topics chosen for discussion were Patient Rights, public engagement with the legislative process, the Clinical Establishment Act, and Medical Errors/Medical Negligence. A central value focus was “Can I be an agent of change in communities and society?” The sessions were provocative by design, aimed at encouraging critical thinking amongst the students. Table 2 provides the structure of the CoI course. There were 10 contact classes.

Teaching-Learning aids, like short video clippings and activities such as reflective writing supplemented the traditional lecture method. Guest speakers were invited to share their experiences on responding to contentious and pressing social issues.

*The feedback evaluation process*

150 first year undergraduate MBBS students of a single medical college (where the authors work) attended this course. On the last day of the course, feedback was received through a semi-structured questionnaire that was administered to the students. Most of the questions were brief with responses on a five-point Likert scale; these addressed the perceptions of need and usefulness of the course, feedback on the coverage, methods of teaching and suggestions for improvement. The questionnaire had gender and age information but was anonymized, with no requirements of individual names. There were some open-ended questions. The study protocol was submitted to the Institutional Ethics Committee (Ref No 240/2018) but was cleared as exempt from ethics approval as this was an evaluation of a course in an educational institution. No individual consenting process was required.

Data was entered and analysed using Microsoft Excel (Office 365). The investigators manually analyzed the open-ended questions following thematic content analysis. Responses were either quoted verbatim or were paraphrased by the authors. The responses quoted verbatim have been put in single inverted commas in the results.

**Table 1: Work plan of the Citizen- Doctor- ES Course**

|  |  |  |  |
| --- | --- | --- | --- |
| **Topics** | **Learning Objectives** | **Value Focus** | **Method** |
| 1. Climate Change – causes and consequence | To understand the interconnectedness between human behaviour, the environment, social consequences and health. | Environmental and Social Consciousness of a medical student | Film (Climate Code Green) and group discussion |
| 1. Globalisation, consumption and garbage management | To internalise how globalisation, consumption and convenience, effects the environment and our health. | Moving from self-focus to a society focus | Guest resource person – a doctor turned environmental activist |
| 1. Sustainable lifestyles and its impact on health | To reflect on how present lifestyles are unsustainable and have unmanageable consequences on the environment and health. | How our lifestyle choices affect other’s lives and our future | Guest resource person – a doctor with a low-cost living perspective |
| 1. Urbanisation and obesity | To discuss the impact of urbanisation on the built environment and health connections to a sedentary, inactive lifestyle. | Confronting environmental health barriers.  Can I make a difference? | Presentation on research done on physical activity and urban spaces and health consequences. |
| 1. Water – its contamination and its management | To understand the use and management of water in a large hospital complex.  To see water as a source of inequity and the health impact of water crises. | Am I responsible? Can I make a difference? | Visit to the institution’s water testing unit and Sewage Treatment Plant.  Reflective narratives by students |
| 1. Water bodies and their conservation |
| 1. Air pollution and its mitigation | To engage with the extent of the problem of air pollution and actions to mitigate the problem. | Can I ensure compliance to rules? | Class debate on vehicular air pollution  Design of a campaign based on primary and secondary research |
| 1. Ecological Mapping and Action Planning | To observe the extent of each of the above environmental issues in the immediate environment of the college campus and develop an action plan that students can adopt, and the can be advocated to the management. | Do I observe things around me? Can I introspect? Can I be the change? | Student volunteers map out different areas of the campus and create a report based on the checklist.  The class discusses the results in small groups and come out with an action plan with individual commitments. |

**Table 2: Work plan of the Citizen- Doctor CoI Course**

|  |  |  |  |
| --- | --- | --- | --- |
| **Topics** | **Learning Objectives** | **Value Focus** | **Method** |
| 1. The relationship between Health and the written Law | To understand the role of historical development and the purpose of law. | Enables the students to appreciate the importance of context, continuity and change | Narration of the history of health and the modern state |
| 1. Public Interest Litigation in Healthcare | To understand the meaning, importance and impact of advocacy on community. | Importance of Advocacy and Solidarity, Inclusion and Subsidiarity | Presentation followed by Group discussion on a real case study of people who sparked a change at the grassroots level |
| 1. Rights of the patients in healthcare | To understand the practical issues of human rights violations faced by marginalized communities and to see the role played by civil society in increasing the visibility of the rights of the marginalized. | Appreciate the role of civil society in fighting for the rights and dignity of the individual. | 1. Narration of the Gay HIV treatment in America. The Benetton Advertisement was the trigger for debate.  2. Guest Lecture by a Transgender Woman on the “The hidden  Identity of a Trans-person” |
| 1. Public engagement with the legislative process. | To understand the practicality of participatory democracy. | The importance of participation in creating social change and the  value of human dignity. | 1. Historical Narration of Age of Consent Bill 1891 and the story of Dr. Rukma Bai.  2. Guest Lecture on “Formulating a Response to the Bill- The case of Surrogacy in India” |
| 1. The Clinical Establishment Act | To describe common good as an important bedrock of the democratic system. | Understanding the meaning of Common Good in a democratic system. | 1.The story of female foeticide in India and the involvement of a doctor in perpetuation of this evil  2. “*Satyamev Jayathe*” (Truth Wins) a Television Show hosted by a popular actor on addressing female foeticide. This triggered discussion and the need for more stringent regulation. |
| 1. Medical Errors and Medical Negligence | To discuss the connection between virtues of humility, truth, patience, compassion, and diligence as qualities of a good doctor. | Understanding the limitations of medicine; importance of humility in practice and of truth telling in communication; accountability. | 1. TED talk “Doctors make Mistakes” by Brian Goldman.  2. Discussion on reported cases on Medical Negligence in India |

**Results**

115 of 150 students, and 96 out of 150 students, provided feedback for the ES course and CoI course of the Citizen Doctor course respectively. This was slightly less than the average attendance of both the ES and CoI classes over the term. (121/150 and 102 /150 respectively.)

Of the 115 students who answered the ES survey, 80 were girls, 30 were boys; 5 students abstained from identifying their gender. Of the 96 students who answered the CoI survey, 69 were girls, 24 were boys; 3 abstained. 75% of students were between 18-19 years of age, 19% were between 20-23 years with 7 non-responders.

The results of the feedback are presented in Tables 4 and 5 and are summarized below as key result areas.

**Need and Relevance of the course**

Over 95% of the respondents of the ES survey strongly agreed or agreed that the environmental science classes were useful for a medical student (Q1, Table 4). The reasons given by most of the class to support the relevance of the course was that it not only created awareness but also spurred their responsibility towards initiating change. This was considered important because of,

‘The crisis in environment and a role that a doctor plays in integrating clean environment with good health.’

However, a quarter of the respondents agreed with the statement that there were far more important things than learning about the environment for medical students (Q.6, Table 4), thus contradicting- to a certain extent- the first overwhelming positive response. There were no reasons given by students to explain why they felt that classes on the environment were not important. Those who wholeheartedly supported the course had this explanation,

‘[the course] provides holistic training, not just being bombarded with technical and clinical knowledge of medicine’

The CoI course was also found to be overwhelmingly useful in terms of information that was provided (Q.5, Table 6) with only 3.2% dissenting.

Students indicated that the course helped them identify and understand contemporary issues and problems. They felt this would help them as a doctor working in the community. One of the respondents had this to say on the effectiveness of the course,

‘Being vigilant of laws will help in questioning the authorities on wrong doings’

**Feedback on the methods used of inviting guest speakers and on the reflective nature of classes.**

For the ES Classes, an overwhelming 87% responded positively to the teaching-learning method of getting people from outside the institute to help them understand “real-world problems” (Q.8 Table 5), with just a couple giving reasons to support their view. In the words of one,

‘All of us are living in a bubble, unaware of real problems of the world. So, getting people from outside is crucial’

Another key pedagogical method was to not preach and provide solutions but to engage in reflection on life experiences, observation, and discussion. 94% agreed that the environment classes made them think about their role as both doctor and citizen. The following were key messages that students took away from these classes that reflect this point,

                  ‘Small steps can lead to big changes’

                  ‘Take steps to change things in my own community’

‘Care for the common good’

It was also felt that these classes provided a break from the general biomedical subjects taught.

‘It was a time of reflection and relaxation for medical students after the core subjects’

 For the CoI classes**,** to the question onthe preferred method of teaching (Q 4, Table 6), 55.9% indicated that the guest lectures by experts were the most useful method, followed by interaction, followed by the use of short films/video clippings used as triggers for the lectures (41.9%) and then the narrative writing. They explained:

On Surrogacy:

‘I never thought that these issues [surrogacy] were important, or to be taken seriously!’

‘The class exposed us to different a viewpoint that was enriching.’

On discussions held after a guest lecture one student remarked:

‘Active interaction with the speaker highlighted the diversity of opinions in class and enhanced my understanding of the topic.’

On the rights of the transgender:

‘Hearing the life struggles of transgender Ms.N and how she manages to overcome it, is truly inspiring’

‘ [The] Interactions with Ms. N was engaging and thoughtful.’

Some students said that they were aware of the issues but did not know how to respond to them. These classes were an eye opener to them.

‘Attending these classes at least made me think on certain issues that I had previously not thought of’

**Possible deterrents in the effectiveness of these classes**

A review of the attendance marked for the ES classes showed a reduction from 100% in the first two classes to 53% and 68% in classes 6 and 7 respectively, raising questions on what drives attendance for such classes in a medical school. In the CoI classes, the attendance of students was 100% in the first class reduced to 74% and 45% by the 7th and 8th classes respectively.

In the feedback survey of the ES class, 16% admitted that they skipped classes because it was not linked to exams (Q.10 Table 5), with 9 students being non-committal.

**Reflection on becoming a Citizen-Doctor in ES and CoI Course**

Perceptions of the individual student’s role and responsibility towards climate change, garbage problems and environmental harm

Responses to three questions (Q.3, 4, 5, Table 5) display the sense of individual responsibility felt by students towards being a responsive citizen. Three quarters of the respondents agreed or strongly agreed that it was the responsibility of doctors to respond to climate change; about 64% felt responsible for the solid waste problems in their area and 79% felt responsible for the environmental harm caused by their behaviour.

There were some who were definite that it was not a doctor’s responsibility to look at these issues. The reasoning given by students on both sides is provided in the Table 4 below.

**Table 3: Responses to individual accountability to environmental issues**

|  |  |  |
| --- | --- | --- |
|  | **Agree that addressing climate change, solid waste issues and environmental harm are responsibilities of doctors/ med students** | **Disagree that addressing climate change, solid waste issues and environmental harm are responsibilities of doctors/ med students** |
| Q.3 | ‘We are the citizens of this country and not strangers therefore have an equal responsibility to address the problem’  ‘A doctor’s opinion matters in the community therefore one has to be proactive in leading the group.’  ‘the health sector has one of the largest carbon footprints in terms of energy, water consumption and generating waste. Therefore, it is our special responsibility’.  ‘A doctor’s job entails not just treating the symptoms but also the cause.’ | ‘It is not just the doctor’s but every individual’s responsibility to respond.’  ‘After a hectic schedule it becomes tiring to respond to this too.’  ‘There are other people who live to protect and respond to climate change and they should take the initiative.’ |
| Q.4 | ‘Not segregating waste in my own room is laziness’ | ‘It’s not dependent on personal behaviour’ |
| Q.5 | ‘I use lot of plastic cutlery adding to environment waste.’ | -- |

Perspectives on the social responsibility of the doctor and citizen-participation in the legislative process

 In response to the importance of a doctor’s role in the community as an active member (Q1 Table 6), 95.7% of students agreed that it is everybody’s responsibility including theirs, while only one out of the 96 disagreed. The students felt that they could take action which could potentially impact others and influence change. The following were some of the responses from students that reflect this:

‘Being a doctor, I can bring about certain changes in laws and policies as we hold a privileged position. Being a citizen, I can fight for justice and set an example for others to change their mindset on issues that plague the country.’

‘People’s participation especially in a democracy is important. Speaking against a known problem is the first step to change.’

In response to (Q 3, Table 6) that addressed the patient’s rights, 92.5% of the students expressed that, through the course they were able to understand and appreciate the rights of patients. Expressing their sensitivity to the socio-political realities of patients one of the students said,

‘[the course]…helped me understand in what ways the patients might be denied rights and to be aware of the right and wrong’

In response to the (Q 2, Table 6), 83% of the students indicated that the course helped them to understand the significance of participating in and influencing the legislative processes, 5.1% said the course was not very helpful and 11.4% were undecided.

On highlighting the perceived benefits of action by the medical fraternity some students expressed their opinion thusly,

‘Healthcare is related in myriad aspects to the laws and policies of the country. For effective treatment to be provided to all, the medical fraternity and the legislature need to work together.’

‘Doing small things, like just sending an email to the editor or creating campaigns in a small group, can be effective.’

There were students, who expressed a strong sense of frustration at the incompetence of the existing system saying,

‘How can I change things in established institutions with people having rigid mindsets?’

‘With rampant corruption how can you change anything in our political system today? ‘

One student identified the time constraints of the doctors as a deterrent to participation in the legislative process,

‘Its not possible for busy clinicians with a large number of patients to participate in the legislative process’

The use of the first person reflects the sense of individual responsibility for one’s actions, as well as for being the initiator of change; the doctor was seen as a role model for the wider community.

**Areas of improvement**

Open ended questions on topics that were not considered useful, and suggestions on topics that could be included, provided information for improvement of this course. In the ES feedback, 86% did not find any topics unnecessary, while a few mentioned that topics should not be repeated, and a couple felt that actions such as tree planting and ‘carry your own cup’ were not useful. For the CoI course, 90% did not identify any topic that could be dropped. A small minority of students felt that historical snippets were unnecessary and that some topics were repeated.

A few topics were suggested for inclusion in the future, such as the role of environmental laws in enforcing human behaviour, politics and policies for change, new types of pollution and ways and use of social media in environmental campaigns. In the CoI feedback, students suggested sessions on the rights of women and child labour issues. Suggestions were given for methods of teaching AND learning and these included - more outdoor activities rather than lectures, case studies of other countries and how they have overcome problems, and more videos and news clippings. A few students also felt that the classes were rushed and there was not enough time for deeper reflections.

**Table 4: Responses to Citizen Doctor – ES classes**

**[n = 115]**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Question** | **Strongly Agree** | **Agree** | **Can’t Say** | **Disagree** | **Strongly Disagree** | **No Response** |
| 1. Environmental Science classes are useful for a medical student | 59.1%  (68/115) | 37.4%  (43/  115) | 3.5%  (4/  115) | 0 | 0 | 0 |
| 1. I see environmental science as an integral determinant of health | 80%  (92/115) | 20%  (23/  115) | 0 | 0 | 0 | 0 |
| 1. I believe it is a doctor’s responsibility to respond to climate change | 27%  (31/115) | 48%  (55/115) | 22%  (25/115) | 1.5%  (2/115) | 1.5%  (2/115) | 0 |
| 1. I am responsible for the solid waste problems in my area | 13.9%  (16/115) | 49.5%  (57/  115) | 26.9  (31/  26.9) | 7.8%  (9/115) | 1.7%  2/115) | 0 |
| 1. My behaviour can cause environmental harm | 22.8%  (26/114) | 56.1  (64/  114) | 13.1%  (15/  114) | 3.5%  (4/114) | 4.3%  (5/114) | 0.87  (1/115) |
| 1. There are far more important things than learning about the environment for medical students | 7.0%  (8/114) | 24.5%  (28/  114) | 29.8%  (34/  114) | 32.4%  (37/114) | 6.14%  (7/114) | 0.87  (1/115) |
| 1. Responding to environmental problems is primarily the job of other people like social activists | 3.47%  (4/115) | 11.3%  (13/  115) | 6.9%  (8/  115) | 47.8%  (55/115) | 30.4%  (35/115) | 0 |
| 1. Getting people from outside the institute helps us understand the real-world problems | 24.5%  (28/114) | 62.2%  (71/  114) | 7.89%  (9/  114) | 3.50%  (4/114) | 1.75%  (2/114) | 0.87%  (1/115) |
| 1. The environment classes made me think about my role as a doctor and a citizen. | 49.5%  (57/115) | 44.3%  (51/  115) | 5.2%  (6/  115) | 0 | 0.86%  (1/115) | 0 |
| 1. I skipped classes because it’s not linked to exams | 3.5%  (4/114) | 12.2%  (14/  114) | 7.89%  (9/  114) | 27.1%  (31/  114) | 48.6%  (56/  114) | 0.87%  (1/115) |

**Table 5: Responses to Citizen Doctor – CoI classes**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Student feedback on the CoI**  **n=96** | | | | | | | |
| **Questions** | | **Strongly Agree** | **Agree** | **Undeci- ded** | **Slightly Disagree** | **Strongly Disagree** | **Not Answered** |
| Q1. Being actively involved in the community is everybody's responsibility including mine | | 56.2%  (54/96) | 39.5%  (38/96) | 3.1%  (03/96) | 0 | 1.0%  (01/96) | 0 |
| Q2- The course helped me understand how as an individual, I can influence laws and policies | | 30.2%  (29/96) | 53.1%  (51/96) | 11.4%  (11 /96) | 3.1%  (03/96) | 2%  (02/96) | 0 |
| Q3- The course helped me better understand the rights of the patients | | **Very Much** | **Some-**  **what** | **Undeci-ded** | **Not Really** | **Not at all** | **Not Answered** |
| 53.6%  (51/95) | 38.9%  (37/95) | 5.2%  (05/95) | 2.1%  (02/95) | 0 | 1%  (1/96) |
| Q4- How would you rate the following methods that were used in the course | | **Extremely Useful** | **Very Useful** | **Some-**  **what Useful** | **Slightly Useful** | **Not at all Useful** | **Not Answered** |
| a. Lecture | | 15%  (14/93) | 44%  (41/93) | 30.1%  (28/93) | 8.6%  (08/93) | 2.1%  (02/93) | 3.1%  (03/96) |
| b. Guest Lecture by Experts | | 55.9%  (52/93) | 33.3%  (31/93) | 9.6%  (09/93) | 1%  (01/93) | 0 | 3.1%  (03/96) |
| c. Short films/video clippings | | 41.9%  (39/93) | 41.9%  (39/93) | 15%  (14/93) | 0 | 1%  (01/93) | 3%  (03/96) |
| d. Reflective Writing | | 13.9%  (13/93) | 32.2%  (30/93) | 36.5%  (34/93) | 11.8%  (11/93) | 5.3%  (05/93) | 3.1%  (03/96) |
| Q-5. How would you rate overall the ten hours course | | | | | | | |
| a. Informative | **Extremely Useful** | | **Some-**  **what** | **Undeci-ded** | **Not Really** | **Not at all** | **Not Answered** |
| 50%  (46/92) | | 43.4%  (40/92) | 2.1%  (02/92) | 3.2%  (03/92) | 1%  (01/92) | 4%  (04/96) |
| Q6. Understanding Constitutional Process is important to effective healthcare | 52%  (50 /96) | | 38.5%  (37/96) | 7.2%  (07/96) | 2.0%  (02/96) | 0 | 0 |

**Discussion**

The ‘Citizen Doctor’ course is a novel way of positioning Environmental Science and Constitution of India classes for first year students of the undergraduate MBBS course. Although the course was built around the core ideas and themes of the CoI and ES, this was unique to St Johns Medical College. The objective of the course was to develop humane doctors by familiarizing the young medical student to contemporary pressing issues and to encourage them to think like civic-minded professional doctors. These students responded positively to the course, as shown in the results of the feedback survey. They were able to describe and reflect on social determinants of health, like climate change, environmental harm, gender discrimination, and poverty seeing them as interrelated issues. They discussed the effective role a physician could play, not only in diagnosing and treating the disease but also in working in society to address important health issues in the larger narrative of government policies. The majority of students expressed the need to be responsive and accountable for their actions and become agents of change. They recognized and articulated citizenship roles and their responsibility to the environment and marginalized sections of society. They also acknowledge that as future doctors, they have the additional responsibility of being good role models. A minority of students felt that responding to problems of the environment and human rights were primarily the job of other people like social activists. Some reasons were that doctors were too busy, burdened with patient care; that being responsive and responsible was not the responsibility of doctors alone; and the incompetence of the government due to prevailing corruption. A majority of students expressed the need to address these persistent issues as the underlying causes of several diseases and situations of ill health and to counter them through strong citizen initiatives.

Another positive feedback on the value of the ‘Citizen Doctor’ course was the reflective, challenging format of the sessions. In the words of the students, the nature of the course makes them ‘think’ and pushes them to action or recognizes the need to change behaviour. Sustainable development and lifestyle choices were topics discussed that seemed to resonate with the students. This is in alignment with global deliberations on ‘Eco pedagogical frameworks’ that serve as a theoretical foundation for education designed for environmental sustainability and global citizenship (19). These frameworks emphasize how diverse forms of knowledge influence public thinking and that the domination of knowledge, agency and action needs to change from the hands of a few to a mass movement. The impacts of climate change and global warming, in terms of health or food access, shelter and livelihoods, is going to affect the most impoverished and marginalized communities the most. Provocation to respond to issues of social injustice, inequity, responsible behaviours, and social consciousness is the requirement of every educational programme especially at a university level as these address future citizens and decision makers. It is even more compelling for young doctors who can expand their circles of concern and influence. The UN’s ‘Vision of a Global Education’ emphasizes that every person should acquire the capacity for enabling and ensuring that the least among the human race should flourish and transform for the better (20). This form of education is based on core values and not centred on knowledge alone. Scientists working on climate change reiterate the fact that public responses to climate change will not happen by imparting knowledge, but by framing actions around people’s core values, identities and ethical positions (21).

The Citizen Doctor course consciously began with key questions like ‘whose rights are we protecting?’ Debates on the Surrogacy Bill and gender rights in healthcare by guest speakers led to long discussions with students that at times, conflicted with their ideas of ‘greater economic benefit’ and were seen by students as ‘impactful’, ‘worthy’, and ‘thoughtful’. Some even acknowledged their ‘privileged role’ in the society, as doctors, and the significant role that they could play in bringing about change. This emphasizes the social responsibility of the physician (22). Discussions on the holistic understanding of citizenship is valuable for medical students today, as there is a growing concern in India (23), as well as elsewhere (24) in the world, that an increasing numbers of students joining medical colleges are from affluent families; they are unaware of socio-economic vulnerabilities. This resonates with global efforts by international organizations like WHO that have issued guidelines for medical institutions on social accountability and responsiveness (25). Therefore, it is important to provide medical students an opportunity for dialogue and discussion (26) on these topics, creating a culture of participatory citizenship (27) that emphasizes the values of liberty, equality, and justice, keeping constitutional democracy vibrant.

In light of the new vision of the Medical Council of India to create ethical, empathic doctors, the findings of this study address these very values and we believe that it would be important to include this Citizen Doctor course in the proposed AETCOM (Attitudes, Ethics, Communication) curriculum or in the Foundation Course. Ideally, an evaluation or certification of students completing this course should be mandated, to give it its due credit and importance in the making of a good doctor. It also establishes an ethical position that academic excellence and marks scored in exams is not what makes a medical student a doctor but that responsiveness to others, including the environment, is the hallmark of empathy and virtue ethics (28) (29) (30).

While the findings of this study are encouraging, the ultimate proof of outcome is in the sustained change of behavior and mindset of these students, as they become doctors and ‘citizen doctors’.

Limitations

An important lacuna identified by students in the present curriculum was lack of engagement with the politics of development, structural issues, centres of power, and policymaking that influence change. The course focused on knowledge to an e extent, and was unable to actively engage all students, with real ongoing problems and advocacy processes to a desired extent

Another limitation was that the Citizen Doctor course was limited to the first year students; its development being structured around lecture time assigned by the university mandated environmental sciences and constitution of India classes. We see the potential of linking the National Social Service program of medical colleges to this course and connecting the newly rolled out ATECOM curriculum to spirally integrating the intrinsic values of this course into ATECOM. We however did not attempt this.

The profile of the single institution that launched this course could also be a limitation in terms of the generalizability of the study to all medical colleges in the country. This medical college where the course was rolled out is in an urban area, places a high value on a social physician who is a link between medicine and society.

CONCLUSION.

The “Citizen Doctor” course for I year MBBS student was found to be useful and beneficial. It evoked a sense of wider responsibility and of responsiveness thus laying the foundation of a ‘Citizen Doctor’. ‘Eco-pedagogies’ are useful teaching approaches that follow a bottom-up method for social transformation. This pedagogical approach of the Citizen Doctor course that is student- centered where students are encouraged to think about issues beyond clinical medicine would lead to critical thinking focusing on issues beyond the ‘self’ to the ‘other’. The evidence suggests that this course must continue and even expand to other years of the medical course, possibly even integrating with mainstream medical subjects. How do concerned citizens, whether medical students or health professionals, engage with policy and expand their circles of influence beyond their work and their own ‘clientele’ of patients, who are citizens themselves? Small research studies, understanding health system responsiveness, visits or weekend internships at civic organizations, are some ways that this course could enrich the experience of the students.

However, due to practical issues like the burden of syllabus, large number of students in a class and non- availability of appropriate teachers it could be difficult to sustain a learner- centered approach of the Citizen Doctor course. But, by making it a required credit course under the new curriculum or by spreading it across the five years of the medical curriculum, it would be possible to have successful interventions at different stages. We also see the potential of linking the National Social Service program of medical colleges to this course. Another possibility is to integrate the Citizen Doctor course in the AETCOM (Attitudes, Ethics, Communication) curriculum linked to an evaluation or certification of students completing this course, thus giving it its due credit and importance in the making of a good doctor.

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**References:**

1. Pandya SK. Something is rotten in our medical colleges. Indian Journal Of Medical Ethics. 2019;4(2):92. Date accessed: 15 Jun. 2019
2. Supe A. Medical humanities in the undergraduate medical curriculum. Indian Journal of Medical Ethics. 2012;9(4):263–365. Date accessed: 08 Apr. 2019.the-undergraduate-medical-curriculum/>. Date accessed: 08 Apr. 2019.
3. Majumder MAA. Should medical humanities be a part of the undergraduate medical curriculum? South East Asia Journal of Public Health. 2012;2(1):68–9.
4. Kalantri SP. Getting doctors to the villages: will compulsion work. Indian Journal Of Medical Ethics. 2007;4(4):152–3.Date accessed: 08 Apr. 2019.
5. Goodin RE. Protecting the vulnerable: A re-analysis of our social responsibilities. 1st ed. : Chicago and London:The University of Chicago Press; 1985.p-12.
6. Vaz M, Kasturi A. Public Health Ethics in the Medical College Curriculum: Challenges and Opportunities. In: Ethics in Public Health Practice in India. 1st ed; Singapore: Springer; 2018. p. 159–74.
7. Parvin P. Democracy without participation: A new politics for a disengaged era. Res Publica. 2018;24(1):31–52.
8. Van Steenbergen, B. The condition of citizenship: an introduction in B.V. Steenbergen (Ed.), The condition of citizenship. London: SAGE Publications Ltd :Sage; 1994. p.27.
9. Hawthorne M, Alabaster T. Citizen 2000: development of a model of environmental citizenship. Global Environmental Change [Internet]. 1999 Apr 1 [cited 2020 Feb 15];9(1):25–43. Available from: http://www.sciencedirect.com/science/article/pii/S0959378098000223
10. Mann K, Gordon J, MacLeod A. Reflection and reflective practice in health professions education: a systematic review. Advances in health sciences education. 2009;14(4):595
11. Ambrose AJH, Andaya JM, Yamada S, Maskarinec GG. Social justice in medical education: strengths and challenges of a student-driven social justice curriculum. Hawai’i Journal of Medicine & Public Health
12. Foundation Course on Human Rights and Duties at Undergradute Level [Internet]. University Press, The University Grant Commission: India; 2001[cited August 2016]. P-14. Availaible from: https://www.ugc.ac.in/oldpdf/modelcurriculum/human.pdf
13. Barucha, Erach, Textbook for Environemental Studies: For Undergraduaute Courses of all branches of Higher Education [Internet]. University Press, The University Grant Commission: India; 2005 [cited August 2016]. p- 8 .Availaible From: https://www.ugc.ac.in/oldpdf/modelcurriculum/env.pdf
14. Cross ref . Rhoads RA. How civic engagement is reframing liberal education. Peer review. 2003;5(3):25–8.
15. Young IM. Justice and the Politics of Difference. Princeton University Press; 2011.Iris Marion Young (1999) Residential segregation and differentiated citizenship, Citizenship Studies, 3:2, 237-252, DOI: 10.1080/13621029908420712.
16. Young IM. Residential segregation and differentiated citizenship. Citizenship Studies. 1999;3(2):237–52. DOI: 10.1080/13621029908420712
17. Ravindran GD, Kalam T, Lewin S, Pais P. Teaching medical ethics in a medical college in India. Natl Med J India 1997;10:288-9.
18. MBBS admisssion Bulletin (Extract from the Prospectus 2019-2020) [Internet].St Johns Medical College P-3. Availaible from :http://www.stjohns.in/images/standarduploads/MBBS%20ADMISSION%20BULLETIN%202019-20.pdf.
19. Coulehan, Jack, et al. "The best lack all conviction: biomedical ethics, professionalism, and social responsibility." Cambridge Quarterly of Healthcare Ethics (2003) 12.1: p- 21-38.
20. Whiting K, Konstantakos L, Misiaszek G, Simpson E, Carmona L. Education for the Sustainable Global Citizen: What Can We Learn from Stoic Philosophy and Freirean Environmental Pedagogies? Education Sciences. 2018;8(4):204
21. Sector UE, Tang Q. Global citizenship education: Preparing learners for the challenges of the 21st century. UNESCo; 2014. / Accessed 5 July 2019.
22. Watts N, Adger WN, Agnolucci P, Blackstock J, Byass P, Cai W, et al. Health and climate change: policy responses to protect public health. The Lancet. 2015;386(10006):1861–914.
23. Coulehan J, Williams PC, McCRARY SV, Belling C. The best lack all conviction: biomedical ethics, professionalism, and social responsibility. Cambridge Quarterly of Healthcare Ethics. 2003;12(1):21–38.
24. Dhalla IA, Kwong JC, Streiner DL, Baddour RE, Waddell AE, Johnson IL. Characteristics of first-year students in Canadian medical schools. CMAJ. 2002;166:1029 –1035
25. Diwan V, Minj C, Chhari N, De Costa A. Indian medical students in public and private sector medical schools: are motivations and career aspirations different?–studies from Madhya Pradesh, India. BMC medical education. 2013;13(1):127.
26. Dhalla IA, Kwong JC, Streiner DL, Baddour RE, Waddell AE, Johnson IL. Characteristics of first-year students in Canadian medical schools. Cmaj. 2002;166(8):1029–35
27. Boelen C. Towards unity for health. Geneva: World Health Organization. 2000.
28. Dharamsi S, Ho A, Spadafora SM, Woollard R. The physician as health advocate: translating the quest for social responsibility into medical education and practice. Academic Medicine. 2011;86(9):1108–13
29. Westheimer J, Kahne J. What kind of citizen? The politics of educating for democracy. American educational research journal. 2004;41(2):237–69
30. Gribble MO. Environmental health virtue ethics. The American Journal of Bioethics. 2017;17(9):33–35. cited 2019 July 25.