

# On the integration of Ethics into the Physiology curriculum

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## Abstract

*A one-day state-level workshop was organised in Karnataka to share the experience of a programme implemented earlier, in 2015-16, at St John's Medical College, Bengaluru, that integrated the teaching of ethics into the physiology curriculum. The aim was to develop the programme further, list the challenges likely to be faced while scaling it up, and identify other colleges which could participate in the scaling up. Twenty-eight participants, representing 13 medical colleges, and five resource persons attended the workshop. There was a consensus that the integration of ethics into the physiology course was relevant and desirable, although the participants identified several critical challenges which might arise. These included the lack of institutional support, a possible lack of student "buy-in" since it was beyond the requirements of the examinations, and time constraints. Specific areas of integration were identified. Three medical colleges, including the host institution, opted to implement the programme and refine it further.*

## Introduction

Medical ethics is taught in some medical colleges today, often as a separate subject (1,2). More people are now trained in medical ethics through a variety of courses (3–6). The widely available basic textbooks in medical ethics and bioethics are an additional resource (7–9). The Medical Council of India has suggested that the teaching of ethics should form an integral part of medical training (10,11).

An alternative approach is to integrate ethics into the core subjects taught to medical students. Such an approach might provide a contextual understanding of ethics and its application in medicine (12–14). The integration of ethics into the physiology curriculum is particularly relevant since the first year has often been described as a "dehumanising" or

disconnected experience in medical training (15,16). Exposure to experimental, human and clinical physiology provides opportunities for discussions on research ethics, animal ethics and clinical ethics.

A programme on integrating ethics into the physiology curriculum, initiated by the Department of Physiology for I MBBS students of the 2015–16 batch of St John's Medical College, Bangalore, has been described in detail elsewhere (17). The experience of this programme was the basis of the workshop. The workshop was held at the college on August 23, 2016 with the following objectives:

1. To delineate the potential areas in the physiology curriculum in which medical ethics could be integrated
2. To understand the problems and challenges that could arise from such integration across a range of medical colleges (private and government, and with varying student strengths)
3. To share the students' and faculty's feedback on the programme in terms of content, method and outcomes, and obtaining their views on the programme's scalability
4. To discuss methodologies for the implementation of such a programme, given the constraints imposed by the problems and challenges identified.

## Workshop methodology

Twenty-eight participants (F=23, M=5), representing 13 institutions (12 private and 1 government) from Karnataka attended the workshop. The participants were divided into five groups, with five to six members in each group. There were three sets of group activities. In the first activity, the participants enumerated the ethical issues that could be integrated into the physiology course. The second was a mock session on integrating ethics into the teaching of physiology, with each group developing the method/process of such integration. The third activity focused on identifying the challenges in the implementation of such a programme. Finally, a panel discussion was held between the participants and the resource persons, who attempted to bring together the various issues that had been raised. After giving written informed consent, the participants provided their qualitative feedback by filling in the pre- and post-workshop questionnaires.

## Outcomes of the workshop

Table 1 presents the participants' list of the ethical issues that could be integrated into the teaching of physiology. It also details the objectives of each session and mentions the part of the curriculum in which such an intervention could be accommodated. While there was considerable overlap with

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**Table 1**  
**Identification of key areas of medical ethics that could be integrated into the physiology curriculum**

Topics identified	Learning objectives	Methods	Point at which integration can occur
<i>Ethical issues related to consent process</i>	To emphasise the importance of consent and appreciate the elements of adequate consent	Role play demonstrating the importance of taking the patient's consent before collecting a blood sample	Haematology experiments – practical class on blood sample collection
<i>Doctor–patient relationship</i>	To emphasise the relevance of the doctor–patient relationship in the medical profession	Clinical case scenario reflecting the elements of doctor–patient relationship, leading to discussions	Clinical physiology practical
<i>Communicating empathetically</i>	To emphasise the importance of communication with patients and their relatives	Case history of a patient with terminal illness and the doctor communicating this to the patient and the relatives	Theory classes – applied physiology across multiple systems
<i>Student–patient interaction</i>	To sensitise students to the relevance of communication with patients and the issue of privacy	Interactive discussions emphasising the importance of “respecting patients as human beings” and “appreciating the value of the greater good”	Clinical examination practical
<i>Confidentiality</i>	To emphasise the importance of maintaining the confidentiality of patients' information and reports	Discussion on issue of revealing students' haemoglobin values on the blackboard and translating this to the importance of maintaining confidentiality of patient information	Haematology practical classes
<i>Biohazards</i>	To discuss aseptic precautions for oneself/ patients/ the surroundings and the issue of waste disposal	Giving examples of how aseptic precautions could be ignored during medical practice and triggering a discussion on the hazards	Introductory class on haematology practicals and reinforcement during subsequent practical classes
<i>Research using animals</i>	To discuss the ethical issues related to the use of animals in research	PowerPoint presentation on the use/abuse of animals in research	Discussion of amphibian charts and graphs
<i>Gender issues during clinical examination</i>	To discuss the gender issues that could arise during clinical examination	Case-based example illustrating gender issues during clinical examination, leading to interactive session	Clinical examination practical
<i>Respect as a virtue</i>	To discuss the importance of mutual respect among “humans” in medical career	Getting student volunteers to learn how to perform clinical examination, leading to discussion on the virtue of “mutual respect”	Clinical physiology practical
<i>Honesty as a virtue</i>	To emphasise the value of punctuality in medical practice	Discussions on the importance of being punctual, regular and attentive, and on proxy attendance while attending classes in medical college	Haematology / human practicals
<i>Fabrication of medical reports</i>	To highlight the unethical practice of fabricating patients' reports / information	Role play to convey the ill effects of fabrication of medical reports	Practical
<i>Plagiarism in research activities</i>	To understand the impact of plagiarism	PowerPoint presentation and discussion on the impact of plagiarism in research activities	Practical classes

the original integrated programme, there were some new topics which reflect wider ethical issues that influence the teaching of physiology and medical education in general. These topics were “gender issues during clinical examination,” “honesty and punctuality as a virtue,” “fabrication of medical reports” and “plagiarism in research activities.” The participants came up with diverse methodologies, such as role play, clinical case scenarios, interactive discussions and PowerPoint presentations. Each group prepared and presented a mock session on one ethical issue to get hands-on experience in planning short and effective interactive sessions.

The challenges to the effective implementation of such a programme, as identified by the participants and their ideas on how to address these challenges are indicated in Table 2. Among the several critical challenges identified were the lack of institutional support, a possible lack of student “buy-in” since the programme went beyond the requirements of

the examination, and time constraints. These were perceived as bigger issues in government-run than in private medical colleges. However, since the workshop was attended by only one faculty member from a government medical college, further elaboration of the comments on these lines may not be generalisable.

### Feedback from the participants

The participants found the workshop “novel,” “an eye-opener,” and “innovative” in terms of the concept. Importantly, the percentage of participants who felt that integrating ethics into the physiology course was essential increased from 61% (17/28) pre-workshop to 83% (23/28) post-workshop. Five participants, who initially felt that the integration programme was not relevant and would interfere with the teaching of physiology, had changed their opinion by the end of the workshop. Four participants felt that the integrated

**Table 2**  
**Challenges to the implementation of integrating ethics into the physiology curriculum**

Challenges	Possible approaches to address the challenges identified in panel discussions/ reflections
The logistics of teaching a large group of students	Incorporate ethical questions in the last 5–10 minutes of the formal theory lectures, when the teacher could address the large group of students at the same time. Use video clippings, which could be a powerful tool to sensitise students to ethical issues. Disseminate through the social media.
Limited human resources for formal teaching of integrated ethics	Build resources by reflection on cumulative lifetime experiences. Sensitise yourself to ethical issues by referring to articles in national and international journals on ethics.
The need to quantify and demonstrate the impact of an integrated ethics programme, if it were to be accepted	Understand the inability to determine the long-term impact. Mixed methods (ie. quantitative and qualitative) should be used in the case of shorter term learning / understanding.
Difficulty in allocating time in an already packed schedule	Build on the pilot programme in St John's, the feedback from which did not indicate disruption of other teaching.
Engaging students in the absence of a university examination	The pilot data from St John's indicates that students are open to this novel programme and see its value.
Possible lack of buy-in from the faculty within a department and from the managements of institutions, both private and especially government, since the MCI has still not mandated such integration	Begin by including the discussions on ethical issues by the faculty who are convinced about the programme and gradually obtain the confidence of other colleagues to do the same. Hold meetings with the management of the institutions to emphasise the importance of integrating ethics into medical training. Introduce the idea of integrated ethics program in post graduate seminars and observe the receptivity among the faculty.

programme should be optional and opined that it might interfere with the teaching of the regular course. Since the “existing physiology curriculum is very tightly packed, students may not pay attention to ethics”. The pre- and post-workshop scores indicated an increase in the participants’ confidence in their ability to facilitate and integrate such a programme in their own institutions.

### Post-workshop impact

The value of the workshop became evident at the time of the submission of this report. Three medical colleges (total yearly intake=450) that participated in the workshop, including the host institution, have committed to implementing the integrated ethics programme during 2016–17 for first-year medical students pursuing the physiology course in their respective colleges. The host institution has since increased its student intake from 60 in the year 2015-16 to 150 in 2016-17. The data from a scaled up initiative would help the Medical Council of India's Attitude and Communication (ATCOM) Competencies (10,11) plan to be implemented in an integrated manner within core subject training.

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