RESEARCH ARTICLE

Effectiveness of healthcare ethics training in the undergraduate medical curriculum: A quasi-experimental study from rural India

SHASHANK BANAIT, JYOTI JAIN, PRADEEP BOKARIYA, SHAHRYAR KHAN

Abstract

Conventional medical education does not provide adequate training to undergraduates to resolve healthcare-related ethical dilemmas. This quasi-experimental study using a pre-post design was conducted to assess knowledge, attitudes and practices in healthcare ethics (HCE) and evaluate the effectiveness of the introduction of HCE in ethical behaviour among medical undergraduates at the Mahatma Gandhi Institute of Medical Sciences in Sevagram, India. All the participants thought that knowledge of HCE is important. There was an improvement in the knowledge of HCE after the intervention, as both weighted mean and percentage consensus improved. In Phase I, absolute learning gain, relative learning gain, and normalised gain "g" were significantly higher after the intervention. In Phase II, the intervention showed low and moderate effectiveness in improvements in the affective and psychomotor domain, and in the ability to handle ethical issues, respectively; but no significant improvement in communication skills. During the feedback session, it was seen that a majority of the participants thought that it is the need of the hour to introduce skill-based HCE into their curriculum from the first year. It can be concluded that it is possible to improve knowledge, and affective, psychomotor ability to handle ethical issues among undergraduate medical students with formal training.

Keywords: *Competency-based medical education, healthcare ethics, Indian medical graduates, medical ethics, professionalism.*

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Introduction

Conventional medical education does not provide enough training to medical undergraduates in resolving the ethical dilemmas they would encounter as healthcare professionals [1, 2] . In the light of the recent spate of incidents of violence against doctors, magnified by the hyperactive coverage in the social, print and audio-visual media, there is a need for undergraduate medical students to be sensitised regarding medical ethics and professionalism [3-5].

It is now a firmly established principle that ethical considerations are integral to medical practice in planning the care of the patient [6, 7] . Formal ethics education in the medical curricula has become a common feature in many Western countries over the last two decades [8, 9]. As medical science advances, the complexity of the legal structure in present day society is also increasing. There is an increased awareness and also a change in moral values in present day society. In addition, there is easy accessibility to internet services and therefore, to online research on medical terms, procedures and treatments which may sometimes be misleading. This has often put healthcare workers, including doctors, in difficult situations. These difficulties could be related to patient treatment strategies, breaking news of unfavourable outcomes, suboptimal provision of healthcare resources, and life care support modalities. There are only a few international research studies and no consensus on how medical ethics should be taught in medical curricula.

The public is often suspicious of the ethical conduct of healthcare workers. The rising trend of consumer court cases, and violence against healthcare workers bears testimony to the same [10]. In view of this mistrust, it has become the need of the hour to make upcoming medical graduates aware of the current scenario. Before we put this into practice, the pre-existing basic knowledge and attitude of the students towards medical ethics and professionalism have to be assessed.

There have been many reports stressing the need for incorporation of ethical and legal training into the medical curriculum as very few doctors are trained in this important area [6, 11, 12]. Medical ethics has also evolved along with advancement in the medical sciences. Greater attention paid to nurturing medical ethics will go a long way towards improving relations between the local community and healthcare workers and help us achieve better healthcare.

Attitude, Ethics and Communication (AETCOM) is a structured longitudinal modular programme in all the phases of medical education, introduced by the Medical Council of India (MCI), now the National Medical Commission, in competency-based medical education (CBME) in 2019 [13]. It provides instruction in professionalism, bioethics and communication skills. More emphasis has been placed on collaborative and interdisciplinary teamwork, altruism and respect in professional relationships, with due sensitivity to differences in thought, social and economic position, and gender.

Training in healthcare ethics (HCE) has traditionally been neglected in clinical practice in India. The aim of this study was to assess the knowledge, attitudes and practices in HCE and evaluate the effectiveness of the introduction of HCE on ethical behaviour among medical undergraduates. The present study was conducted to gauge the effect of the introduction of an HCE orientation programme on ethical behaviour and assess the students' perceptions regarding the inclusion of an HCE orientation programme in the medical curriculum.

Methods

Design and subjects

This was a quasi-experimental study using a pre-test and post-test design. Quasi-experimental research resembles experimental research, in which the participants are not randomly assigned to conditions or orders of conditions. As the independent variable is manipulated before the dependent variable is measured, it eliminates the directionality problem. In a pre-test and post-test design, the dependent variable is measured once before the intervention is implemented, and once after it is implemented.

This study was carried out over a period of six months from October 2017 to March 2018, in the Department of Medicine, Mahatma Gandhi Institute of Medical Sciences (MGIMS), Sevagram, Wardha, which is a 920-bedded tertiary hospital attached to a rural medical college located in Central India. The Department of Medicine has 192 beds and caters to over 12,000 outpatients annually. The study was carried out among the final year medical students. All 63 current final year medical students were invited to participate in the programme. A total of 40 final year medical students, who were willing to participate voluntarily and consented, were included in the study. Teachers were from among the faculty of the Department of Medicine, and are regularly involved in teaching undergraduates.

Ethical considerations

Approval was taken from the institutional ethics committee and institutional curriculum committee before starting the study. Written informed consent was taken from all study participants before inclusion in the study. In the consent form, we explained the aim of the study, and the right to withdraw from the interview process at any time without any reprisals.

The intervention

Pre-intervention assessment

In the first phase of this study, we assessed the students' knowledge of healthcare ethics by pre-testing with a self-administered, structured questionnaire with close-ended questions. The questionnaire was pilot-tested. We conducted an objective structured clinical examination (OSCE) to assess the participants' behaviour in the context of HCE at baseline.

Development of healthcare ethics orientation programme

A panel was appointed at the institutional level and baseline findings of knowledge and behaviour of students in the context of healthcare ethics was shared with them. The topics for interactive teaching were selected with a focus on the importance of knowledge of ethics, of the four fundamental principles of HCE, of ethics committees and attitudes towards HCE, and eight OSCE stations on decisions to forgo treatment, confidentiality, truth telling and women's health were decided, keeping the cognitive, psychomotor, affective and communication skills domains in mind. This was the basis on which the HCE orientation programme was developed.

Introduction of a healthcare ethics orientation programme

In the first phase of the intervention, HCE was taught to all the study participants through interactive lectures. In the second phase, audio-visual aids like video and PowerPoint presentations were used to teach psychomotor, affective and communication skills focusing on a selected HCE principle, to all the study participants.

End-line assessment

All study participants also underwent a post-intervention test, based on a self-administered, structured questionnaire with close-ended questions and OSCE which consisted of multiple stations where each candidate is asked to perform a defined task, such as a focused counselling with a standardised marking scheme specific to each case, after teaching through audio-visual aids.

Feedback

All the study participants, who participated in both the study phases, were asked to give feedback at a focus group discussion (FGD). The objectives of the FGD were to assess the perceptions of medical students towards the teaching of HCE as part of the medical curriculum, and to understand their perceptions of the usefulness of HCE in their professional life.

Process of focus group discussion

Final year medical students were informed about the FGD and its objectives. Students were asked to volunteer to participate in the FGD. They were informed about the date,

timing and venue of the FGD. Thirty-five students volunteered, and we conducted FGD in three groups of 12, 12 and 11 students, with a duration of 45 minutes each. The facilitator explained the purpose and the process of the FGD to the participants.

Data analysis

To assess how students' performance in the cognitive domain of HCE improved from the pre-test to the post-test in the experimental group, a comparison of improvement in score from pre-test to post-test was done by using the paired t-test for data collected through the questionnaire for phase I of the study. Scores were calculated as: Absolute learning gain = [(% post-test) – (% pre-test)], relative learning gain = [(% post-test) – (% pre-test)] / (% pre-test) x 100, and normalised gain (g) = [(% post-test) – (% pre-test)] / [100 – (% pre-test)]. Effectiveness of the intervention was determined as "Low" if the range of normalised gain (g) was 0 – 0.29, "Medium" if the range was 0.30 – 0.69 and "High" if the range was 0.70 – 1.00.

For improvement in the psychomotor, affective communication skills and ability to handle the ethical issues domain, we compared the OSCE score before and after teaching. We calculated mean scores before and after the intervention, and compared them by using percentages based on denominators – which are 5 where the Likert scale was used and 10 as per OSCE checklist scores.

Results

The present study was conducted to assess the effect of training in basic HCE to MBBS undergraduate students. The 40 students who consented to participate were assessed in phase I, for knowledge of HCE before and after the intervention. The students were trained through a mini-workshop regarding basic HCE and its importance in clinical practice. In phase II of the study, psychomotor, affective and communication skills regarding healthcare ethics were assessed before and after the intervention. In phase 2, a few selected issues related to healthcare ethics were taught to the students using audio-visual aids [Figure 1].

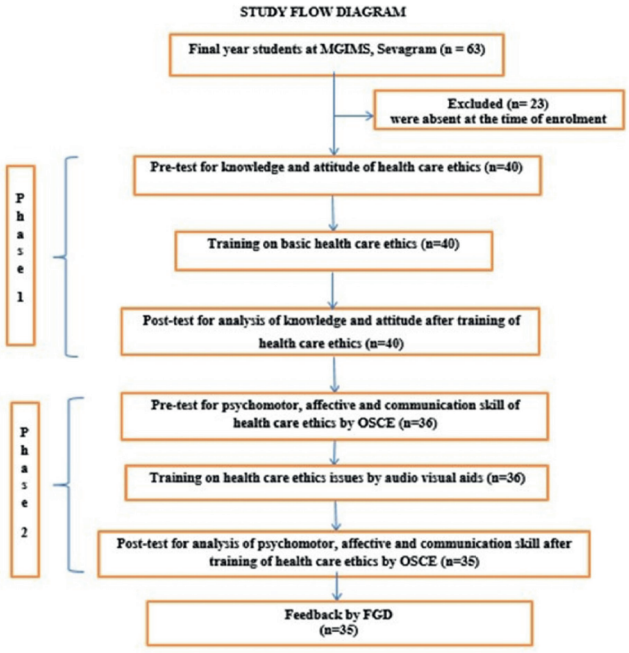
General characteristics of study participants

The mean age (±standard deviation) of 40 study participants was 22.09 (± 2.13) years. Of these 40 participants, 85% had not attended an ethics workshop before.

Students' performance in the cognitive domain of healthcare ethics on the importance of knowledge of ethics

The scores of the 40 study participants in the segment on the importance of knowledge of HCE before and after the intervention (post-test) are shown in Table 1. All the participants thought that knowledge of HCE is important in their field and all of them were aware of the need for informed consent. After the intervention, there was an improvement in the students' knowledge regarding the Hippocratic oath and ICMR guidelines, with increase in the number of students knowing their content from 9 (22.5%) to 39 (97.5%) and 2 (5%) to 34 (85%), respectively, as shown in Table 1.

Figure 1 : Flowchart of the study participants.



Students' performance in the cognitive domain of healthcare ethics

The weighted mean and percentage consensus of all the students pre- and post-intervention are shown in Table 2. The difference in percentage consensus was found to be statistically significant in all variables regarding ethics committees and attitudes towards HCE after the intervention.

Effectiveness of intervention in cognitive domain of healthcare ethics after Phase I

The improvement shown in the mean pre-test scores after the intervention rose from 3.2 to 3.78 as shown in Table 3. Normalised gain "g" was found to be 0.32, indicating the moderate effectiveness of the intervention in the cognitive domain of HCE.

Effectiveness of the intervention on affective, psychomotor and communication skills and ability to handle ethical issues: Domain of healthcare ethics after phase II.

Absolute learning gain, relative learning gain and normalised gain "g" were calculated to assess the effectiveness of interactive lectures and audio-visual aids in improving affective, psychomotor and communication skills and on the ability to handle ethical issues. The intervention (interactive lectures and audio-visual aids) was found to have low effectiveness for OSCE scores (normalised gain was 0.26), while the intervention (interactive lectures and audio-visual aids) showed moderate effectiveness in increasing the

Table 1: Students' performance in the cognitive domain of healthcare ethics on the importance of knowledge of ethics.

Statement		Pre-test n (%)		Post-test n (%)	
		Yes	No	Yes	No
2.1	Do you think knowledge of ethics is important in your work?	40 (100)	0 (0)	40 (100)	0 (0)
2.2	Do you know the main contents of Hippocratic Oath?	9 (22.5)	31 (77.5)	39 (97.5)	1 (2.5)
2.3	Do you know the main contents of ICMR guidelines?	2 (5)	38 (95)	34 (85)	6 (15)
2.4	Do you entertain patients' questions during your bedside visits in the wards? *	32(82.1)	7 (17.9)	36 (90)	4 (10)
2.5	Have you attended training in bioethics? *	6 (15)	34 (85)	13 (33.3)	26 (66.7)
2.6	Are you aware of informed consent?	40 (100)	0 (0)	40 (100)	0 (0)
2.7	Do patients ask you about their diagnosis during your bedside visits in the wards? *	37 (94.9)	2 (5.1)	37 (92.5)	3 (7.5)

**Note: Data for one student is missing as the student did not respond to these statements.*

ability to handle ethical issues (normalised gain was 0.41). However, communication skills did not improve after the intervention [Table 4].

Feedback from the FGD

Student participants' perceptions regarding introduction of healthcare ethics into the curriculum

The participants thought that it was the need of the hour to introduce HCE into their curriculum. They said that it should be introduced from the first year and sensitisation classes regarding the usefulness of medical ethics should also be conducted. One participant said:

> *Earlier we were never taught about medical ethics, now these sessions will help us in our clinical practice. With changing health care scenario it is the prime requisite that we all medical graduates should be made aware of medical ethics.*

The participants suggested that communication skills should be taught during the second year of the course, as their clinical bedside posting starts by then, and it will help them to interact with patients and their relatives more confidently. Another student said that:

> *They should be oriented to treat the cadaver with respect when they performed dissection in Anatomy sessions.*

The approach in HCE teaching must be skill-based and present real-life situations for teaching-learning. It should be part of clinical teaching and should be carried out in the clinical wards. Participants made recommendations that workshops should also be conducted and that external experts should be invited to teach HCE. The Bioethics wing of the Institution should shoulder the responsibility of teaching HCE to students, using a module specially developed for the purpose. Students said that apart from medical students, all healthcare staff, including healthcare professionals of government institutions, should be sensitised across all levels of health systems. It will also equip them to work in a team with greater cooperation and be more empathetic to their patients.

Student participants' perceptions regarding benefits of learning healthcare ethics in their profession

The students expressed the view that by understanding HCE they would learn how to communicate with their patients more effectively. It would motivate them to behave ethically with patients and others. One female participant said that:

> *Knowing about medical ethics has opened up a newer perspective for us, now we will be more careful in patient care and will respect our patient's perspective.*

Another student said that it would help them to solve problems arising during their work in healthcare settings:

> *We will be more at ease when we practise ethically. National Medical Council should have thought earlier to make medical ethics as part of our curriculum.*

During FGD, students said that the training would make them more confident and more responsible in handling crisis

Table 2: Statistical analysis of students' performance in cognitive domain of healthcare ethics before and after intervention.

Cognitive domain		Pre-test		Post-test	
		Weight Mean	Consensus (%)	Weight Mean	Consensus (%)
Responses regarding ethics committees (EC)					
3.1	Is there an EC in your institution?	4.2	60.2	4.9	98.1
3.2	EC advise healthcare personnel when they encounter ethical problem	3.6	62.6	4.7	79.4
3.3	EC approve and guide research	4.3	72.4	4.9	94.1
3.4	EC teach medical ethics to students	3.2	50.8	4.4	56.1
3.5	EC conduct bioethics conferences	4.1	68.9	4.5	68.9
Attitudes of the study participants towards healthcare ethics					
4.1	Doctors know the best irrespective of patients' opinion	3.2	57.5	4.9	71.5
4.2	Patients' wishes should always be adhered to	3.3	57.5	4.03	71.5
4.3	Consent is required only in case of operations and not for tests & medications	11.5	63.8	2.02	45.3
4.4	Bound to treat all patients on approach	3.46	42.6	3.9	55.8
4.5	Children should never be treated without consent of parent	3.87	49.6	4.1	63.5
4.6	Close relatives should always be told about patient condition	3.73	38.5	3.8	47.75
4.7	Promote work through advertising	1.95	52.9	1.9	53.1
4.8	If law allows abortion, doctors cannot refuse to do abortion	2.85	47.7	2.8	36.6
4.9	If a patient wishes to die, he or she should be assisted in doing so	2.35	55.9	3.35	29.3

situations. They would get more satisfaction from their work with improved interaction with patients and their relatives. It would also increase patients' respect for them and trust in the healthcare facility. They shared the belief that such training would help them in their future clinical practice, to deal with medico-legal cases.

A final theme that emerged from participants' comments was that the introduction of HCE into the medical curriculum is the need of the hour in India. The training of HCE should be initiated at the beginning of the course and continued throughout the whole course.

Discussion

In 2019, the Medical Council of India had revised the undergraduate medical education curriculum as CBME so that the Indian Medical Graduate (IMG) is able to recognise "Health for all" as a national goal. The revised curriculum has attempted to enunciate the competencies that students should have learnt to be able to perform the roles of

Table 3: Effectiveness of intervention in the cognitive domain of healthcare ethics after Phase I.

Domain	Mean pre-test score	Mean post-test score	ALG	RLG	"g"	Interpretation
Students' Performance in Cognitive Domain of healthcare ethics	3.2	3.78	11.6	18	0.32	Intervention has moderate effectiveness

Note: ALG: absolute learning gain; RLG: relative learning gain; "g": normalized gain

Table 4: Effectiveness of intervention in affective, psychomotor and communication skills and ability to handle ethical issue: Domain of healthcare ethics after Phase II.

Domain	Mean pre-test score	Mean post-test score	ALG	R	"g"	Interpretation
OSCE Score	3.90	5.50	16	41.03	0.26	Intervention has low effectiveness
Communication Skills	2.19	2.23	0.8	1.83	0.02	Intervention has no effectiveness in increasing communication skills
Ability to handle ethical issues	1.89	3.17	25.6	67.72	0.41	Intervention has moderate effectiveness in increasing the ability to handle ethical issues

Note: ALG: absolute learning gain; RLG: relative learning gain; "g": normalized gain; OSCE: objective structured clinical examination.

clinician, professional, leader, communicator and life-long learner [1]. Professionalism has always been an essential and integral part of the doctor-patient relationship. It has received increasingly focused attention over the last decade. Healthcare ethics is considered an essential component of the professional attributes of doctors, especially in their communication skills and patient-centred approach to care.

The four principles of ethics that are considered the foundation of the doctor's primary duties towards patients and society are: (a) respect for the patient's autonomy; (b) responsibility to avoid harm or injury to the patients (non-maleficence); (c) the duty to do good to patients, relieve their pain and suffering and to save life if possible (beneficence); and (d) the principle of justice and fairness [14] .These fundamental guiding principles help us to focus our minds on ethical issues [15].

As professionals, the IMG are expected to have an adequate knowledge of HCE together with an appropriate level of expertise. They should recognise ethical issues that may arise during the course of patient care and be aware of the need for clinical ethical judgement and decision making using bioethical principles. CBME has been recently introduced with the objective that medical graduates should understand and apply the principles of bioethics and law, clinical reasoning, healthcare delivery system-based care, empathy and other human values, effectively communicate with patients and their families, while they apply their medical knowledge and research to the care of the patients. It is also expected from them that IMG should respond to events and issues in a professional, considerate and humane fashion.

In this study of undergraduate students, mini-workshops on the principles of HCE were used as tools for improving knowledge, attitude, psychomotor, affective and communication skills related to HCE. The students, after training, were able to use these skills to solve ethical issues and also to provide feedback. Absolute learning gain, relative learning gain, and normalised gain (g) were improved from baseline to end of the study in almost all domains, except communication skills. The observed changes in learning gain after intervention suggest that knowledge, attitude, psychomotor, affective and communication skill related to HCE can improve. These changes may have been due to life experiences, medical training, or some other unidentified variables. Further, a multi-centric cohort study with a large sample size could better determine if and how HCE training impacts the knowledge, attitude, psychomotor, affective and communication skills among IMG.

In the present study, in phase I, absolute learning gain, relative learning gain and normalised gain (g) were significantly higher after the intervention and were found to be moderately effective in improving the cognitive domain of HCE. In phase II, the intervention (audio-visual aids) had low effectiveness, as normalised gain was 0.26 for improving affective, and psychomotor skills, and moderate effectiveness in increasing the ability to handle ethical issues (normalised gain was 0.41) and no significant improvement was found in communication skills.

In a study conducted in Australia, it was emphasised that a

core curriculum of ethics knowledge must address both the foundations of ethics and specific ethical topics. Teaching ethics involves the teaching of knowledge of ethical issues as well as skills and attitudes by different teaching and assessment methods [16].

Studies have shown an improvement in learner awareness [17], attitudes [18], knowledge [19], confidence [20], decision making [21], moral reasoning [22] and delivery of bad news [23]. However, there is a need for stronger evidence to study the relationships between medical ethics education, physician performance and patient outcomes.

Comparing the results of the present study with existing literature is beset with certain difficulties. Despite our best efforts, we could not find studies that have been used for expanding psychomotor and communication skills of HCE in medical undergraduates. However, our findings are in concordance with findings of others that augmenting knowledge of HCE is amenable to intervention and that with training it can be improved.

There is broad acceptance regarding teaching medical ethics and professionalism to upcoming medical graduates. However, there is no consensus about the specific goals as regards ethics knowledge and skills to be imparted. There is also no agreement as to the most effective methods for instruction and assessment.

Limitations

This study has certain limitations. It is possible that the prevailing mood, state and motivation to participate might have had considerable bearing on the results. Self-administered questionnaires were used in the study. The questionnaire contained questions about HCE-related issues that they might not have faced so far being medical undergraduate students. Some questions needed the study participants to imagine a hypothetical situation and state their response to it. Here, the possibility of reporting bias cannot entirely be ruled out. The study sample consisted of a selected group of students in a single medical college. Therefore, the external generalisability of the results could be limited. There was no control or comparative group and hence, it is difficult to attribute all the improvement seen in knowledge, attitude, psychomotor, and affective skills related to HCE to the intervention alone.

However, we faced many challenges while imparting medical ethics education:

a) There is no agreement about learning objectives for medical ethics and professionalism in the traditional medical curriculum.

b) Several pedagogical methods have been shown to offer some benefit to learners, but the supporting data is rare, and educational approaches vary greatly between programmes and institutions.

c) Increasing pressure to demonstrate effectiveness raises particular challenges for the faculty teaching medical ethics, because these educational efforts do not always produce short-term, quantitatively measurable improvements.

d) The faculty needs to be sensitised and trained regarding the need for HCE and professionalism training in medical education and for faculty development , significant resources and expertise will be required.

Addressing these challenges requires an enthusiastic, systematic, and interdisciplinary approach. Although this is a daunting task, we propose future studies to address these issues.

Conclusion

Based on the findings of this study it can be concluded that it is possible to improve the knowledge, affective, and psychomotor skills, and ability to handle ethical issues pertaining to HCE among undergraduate medical students with formal training.

The findings of this study raise some fundamental and important issues for ethics education among medical undergraduates and the maintenance of professional ethical conduct in healthcare. The study points to the need for appropriate training among graduates and the faculty and to devise means to sensitise them to these issues in the workplace.

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RESEARCH ARTICLE

Views of the taught and the teachers on medical ethics teaching in two universities in Kenya

ELIZABETH ANNE BUKUSI

Abstract

Medical or clinical ethics provides guidance for health practitioners and has, hopefully, been taught to medical students during training. The teaching of clinical/medical ethics is more important in the current times because of advances in medical science and the different cultural and socioeconomic circumstances in which medicine is practised. This study sought to determine if and how clinical/medical ethics was taught at two Kenyan medical schools by conducting focus group discussions with undergraduate students and key informant interviews with lecturers teaching ethics and academic administrators. While medical/clinical ethics is a part of the medical curriculum approved by the Kenya Medical and Dental Practitioners Council (Board) and is taught during the training, we identified a gap between the theory and application of ethics education. Undergraduates, medical school administrators and lecturers from both institutions acknowledged a lack of role models and mentors, and a need for further training in communication skills since medical ethics has not been made an examinable subject and there has been no formal requirement for training of lecturers teaching ethics. For the short-term, these gaps can be addressed by training lecturers in medical/clinical ethics, and identifying and utilising suitable reference materials, while long-term measures include developing context-appropriate materials for teaching, in addition to nurturing mentorship skills among lecturers for ethical role modeling.

Keywords: *medical (clinical) ethics, medical training, ethical behaviour, undergraduate medical students*

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Introduction

Medical or clinical ethics provides codes of conduct for healthcare professionals [1]. These include responsibilities and expectations. Such principles guide every day practice for medical care, but more importantly for the resolution of medical dilemmas.

Modern medicine is traced back to the "father of medicine" Hippocrates (460-375 BCE), and this is signified in the Hippocratic Oath [2] which is still administered in some form