ORIGINAL ARTICLE

PERCEPTIONS OF INTERNS TOWARDS A MODULE FOR TEACHING MEDICAL ETHICS USING THE ANDROID SMARTPHONE APPLICATION WHATSAPP

Archana Dambal[1], Naren Nimbal[2], S. T. Kalsad[3], R. K. Rajashekhar[4], Aruna Bhavane[5], Gajanan Pise[6], Sunanda Halki[7], Siddappa Dhaduti[8]

ABSTRACT: Introduction of ethics and communication skills into the undergraduate medical curriculum is being contemplated by the medical council of India as a part of competency training. The methods of delivering the content are still in the formative process. Interns experience ethical dilemmas when they step into the real world clinical experiences albeit supervised. Delivering a curriculum to them is practically difficult because they are at different places and have different work shifts. This study is a pilot project to know the extent to which interns felt engaged with medical ethics and how relevant they considered structured classes for learning principles of medical ethics and to explore the whatsapp messenger system in teaching medical ethics. **MATERIALS AND METHODS:** A whatsapp group of consenting interns was formed and a series of short notes with activities were posted on the whatsapp group for them to learn. They were then assessed by 2 assessors in the form of responses to 4 short essay questions for 15 marks that they posted on a google form, the link for which was also posted on the whatsapp group. **RESULTS AND DISCUSSION:** Out of 20 interns, 12 consented to participate in the study and the others could not as they did not have a smartphone. The average duration to complete the responses was 4.5 days [±3.1 days]. Average marks obtained were 5.3[±4.1] out of 15 marks. Only 6 interns crossed the benchmark of 50%. Most of them liked whatsapp as a tool of education but found structured classes for ethics unnecessary. They expressed the need for developing a module incorporating pictures, videos and multiple choice questions if whatsapp was to be used as a tool to learn ethics. **CONCLUSIONS:** There is need to reinforce the training of interns in medical ethics and professionalism. The present method of using whatsapp messenger as a teaching tool is met with a few barriers that need improvisation. **LIMITATIONS:** This study is limited by a small sample size. We intend to make modifications as suggested by the interns and study a larger sample size of interns in the future.

KEYWORDS: Module for teaching medical ethics, professionalism, medical education, android, smart phone application, whatsapp messenger.

INTRODUCTION: The teaching of ethics in our medical colleges is limited to few classes in forensic medicine and general medicine. This has been reviewed and changes are planned to be introduced in the curriculum incorporating ethics and communication skills from the first year itself.[1] The curriculum and its teaching –learning method itself is still in the formative process.

There is no doubt that teaching ethics and professionalism is important for the students of medicine. Those involved in undergraduate teaching do not need convincing of its value in the training of doctors. But how do the internees perceive it? Internees are in a stage of transition where all they learned over four and half years needs reinforcement to face the real world. While they take

ORIGINAL ARTICLE

up supervised responsibility of their patients, they come across ethical dilemmas that they may find difficult to comprehend. Reinforcement in training is not easy because they are posted in different places and have different duty schedules. This difficulty maybe addressed by application of e-learning, but there are various differences from the western world in our traditional teaching methods including limited application of e-learning. E-learning is a new concept in medical education and various modalities of e-learning are being explored recently.

The young doctors use mobile phones in India predominantly for entertainment and for exchange of information. In a systematic review smart phone applications were found to be used in medicine for disease diagnosis, drug reference, medical calculators, literature search, clinical communication, Hospital Information System client applications, medical training, general healthcare applications, medical education and for patients focusing on disease management with chronic illness. In that review only 7 articles were pertaining to medical education.[2]

What if we designed a teaching-learning method to reinforce the knowledge for resolving ethical conflicts using a mobile application that allows quick and efficient delivery of content, with group interaction and assessment which is already being used by them for quick exchange of information and entertainment?

So we designed a module to explore the whatsapp messenger system for teaching principles involved in resolving ethical conflicts to interns.

The Objectives of the present study were to know the extent to which interns felt engaged with medical ethics and how relevant they considered structured classes for learning principles of medical ethics and to explore the whatsapp messenger system in teaching medical ethics.

This was one of the 3 modules designed for teaching principles of ethics by the department of general medicine and the medical education unit of our college.

MATERIALS AND METHODS: After obtaining institutional ethical committee permission the interns posted to the department of general medicine of our college were recruited by purposive sampling. Interested interns were invited to participate by forming a whatsapp group.

Informed consent was obtained electronically by posting the form on whatsapp group. The interns were allowed to exit the whatsapp group whenever they desired. All the interns and the administrators of the group took a pledge of confidentiality. The interns' names were coded to protect confidentiality. They were assured that their opinions would be respected as long as mobile etiquettes were maintained and that the group would not be used for any other purpose and would be adjourned soon after the discussion.

A module was designed to teach principles of ethics, challenges to ethical practice and ethical conflict resolution by using Davidson's principles and practice of medicine as a resource material since this is the prescribed textbook of our health university.[3] The specific learning objectives were set as follows:

At the end of this whatsapp discussion lasting ten days, the internees should be able to:
- Enlist the types of ethics and the situations where ethics is applicable in medicine.
- State the principles governing clinical ethics.
- Identify the causes for ethical conflicts.
- Apply the ethical analysis approach to solve ethical problems in the given case scenarios.

ORIGINAL ARTICLE

Learning material with activities was posted on the whatsapp group. The learning material was provided as a set of short notes of 50 to 60 words in length. Each note was followed by a vignette of commonly experienced ethical problem which they were asked to solve.

Assessment of learning was done by a set of questions that were created on the google forms, the link to which was posted on whatsapp group. Evaluation was by two separate assessors based on model answers prepared by the first author. The interns' identities were coded for fair assessment.

Questions pertinent to the content as well as satisfaction in using the teaching aid were asked. Some of the questions were open ended. The period to study and respond was fixed at 10 days.

The feedback was obtained in the form of questions taken from a previous study.[4] and modified to suit our context was as follows:

Questionnaire:
1. Does medical ethics learning interest you? Yes/no
2. Please indicate how far you agree with the following statements within a range from 1 to 5, 1 representing strongly disagree and 5 representing strongly agree.
    - I.   Medical ethics is just common sense.
    - II.   Medical ethics need not be taught in classes.
    - III. We do not cover the topic in enough detail to make a difference anyway.
    - IV.   Whatsapp messenger system is an efficient way of learning medical ethics.
3. List the barriers perceived by you in learning principles of ethics through whatsapp messenger application.

Permission from institutional ethical committee and the head of our institution were obtained to conduct this study.

Statistical analysis:
- The average values of responses were calculated for questions 1 to 3.
- The data was read and re-read till concepts emerged for question 5. Similar themes were coded and categorized. The categorized themes were reported as percentages.

RESULTS: The whatsapp group was formed including 20 interns posted to general medicine and they were a mix of those who passed MBBS in 1 or more attempts. Among them 12 interns consented to participate. The remaining interns declined as they did not have smart phones.

The average time taken for response was 4.5 days [Standard deviation 3.1, range 9 days and standard error 0.9].

The average marks obtained by the students were 5.3[+4.1] out of 15. Out of 12 interns, 4 did not attempt the questions related to content learning for assessment. When their non-contribution was set aside, the average marks obtained was 8.

Six interns could clear the benchmark of 50% set by the 2 assessors. The summary of marks obtained for each of the questions is in table 1.

Most of the interns liked whatsapp as a tool of education but expressed that structured classes were unnecessary as it was mainly common sense. This wrong notion could have been due to the traditional curriculum in which ethics training is not explicit. The feedback obtained from the interns is shown in figures 1 and 2.

ORIGINAL ARTICLE

DISCUSSION: Two new aspects have emerged as essential in the Indian medical education scenario, medical ethics and e-learning.

Medical ethics is imbibed as a hidden curriculum by observing role models. This is clearly inefficient in view of increasing patient-doctor conflicts. A study conducted in 2007 in London found that some students' perception towards learning medical ethics was more driven by law than altruism and yet they found learning ethics important for future practice irrespective of their interest.[4]

With the advent of mobile phone technology we have noticed that students are increasingly using smart phone applications for communication regarding patient care and learning and sometimes unscrupulously in exams too. While several universities across the world have harnessed mobile technology in medical education,[5,6] this mode of e-learning in India is still in its infancy. Literature search in Pubmed with keywords medical education, mobile phones and India yielded only 8 articles.

Our approach of teaching medical ethics using whatsapp messenger system as a platform for discussion was met with limited success.

The acceptance to undergo training itself was only 66% because of a lack of the expensive device. The non-uniform availability of smartphones may be addressed in the future by providing these devices loaded with electronic learning material at the beginning of the course itself as done elsewhere.[5,6]

The average marks obtained by the students were below the benchmark that was set. This factor was heavily influenced by the performance of interns who did not attempt to answer the short essay questions at all. However even these students in their feedback rated on a scale of 1 to 5 expressed that they liked whatsapp learning activity. On questioning them retrospectively about their selective answering of feedback questions while ignoring the short essay questions that tested learning, it was found that the screen resolution of their smart phones was small affecting the visualization of paragraphs and composition of answers. They also suggested that if the activities were based on video clips or photographs or multiple choice questions, then the learning would be more "Fun".

Screen resolution was also a factor limiting learning in another study.[7]

Surprisingly the majority of interns expressed that learning ethics was just common sense and that structured classes to teach principles of ethical conflict resolution were not required. This is in paradox with the large number of cases filed against doctors in the consumers' court each year. These views may be influenced by the traditional curriculum that they were taught in and the lack of robust methods in traditional exams to assess professionalism. That which is assessed is usually learnt.

Some of the interns preferred face to face interactive learning instead of an e-learning module for principles of ethics and justified that a human element is very essential in learning such topics. They also suggested that the module should be taught in the interns' orientation programme that is held prior to their internship.

CONCLUSION: The knowledge of interns to handle ethical conflicts in the future is inadequate as found in their performance in the assessment of our teaching module. They need formal training at the beginning of internship itself.

ORIGINAL ARTICLE

The module developed using whatsapp messenger system of smartphones as a learning platform for ethical principles may not be suitable or may need modification incorporating video clips, photographs or multiple choice questions.

Limitations of The Study and Future Implications: This is a pilot study limited by the small sample size and purposive sampling of interns.

We plan to test the module after making suitable modifications by including a larger number of interns at the beginning of their internship itself during 2016.

	Short essay 1 4 marks	**Short essay 2 4 marks**	**Short essay 3 3 marks**	**Short essay 4 4 marks**	
Summary of marks obtained	Enlist any 4 recent advances in biomedical science and their application to clinical care where ethical problems arise.	Whose right is it to refuse or opt for the treatment? In which situations does a patient's autonomy become limited?	A middle aged labourer who is very poor needs coronary artery bypass grafting for ischemic heart disease. What is the reason for ethical problem here?	A patient who has no living will has suffered a cerebrovascular accident and is comatose. The doctor expresses that there is no chance of the recovery of his brain. This patient requires ventilation in an ICU. One of the relatives asks not to ventilate as she prefers her relative to not suffer. What are the ethical issues here and how are they solved?	Total marks obtained by students out of 15
Minimum	0.0	0.0	0.0	0.0	0.0
Maximum	4.0	3.0	3.0	3.0	10.0
Range	4.0	3.0	3.0	3.0	10.0
Mean	2.2	1.2	0.7	1.3	5.3
Std. Dev.	1.9	1.2	1.0	1.2	4.1
Standard Error	0.6	0.3	0.3	0.4	1.2
Table 1: Summary of marks obtained for each of the questions					

ORIGINAL ARTICLE
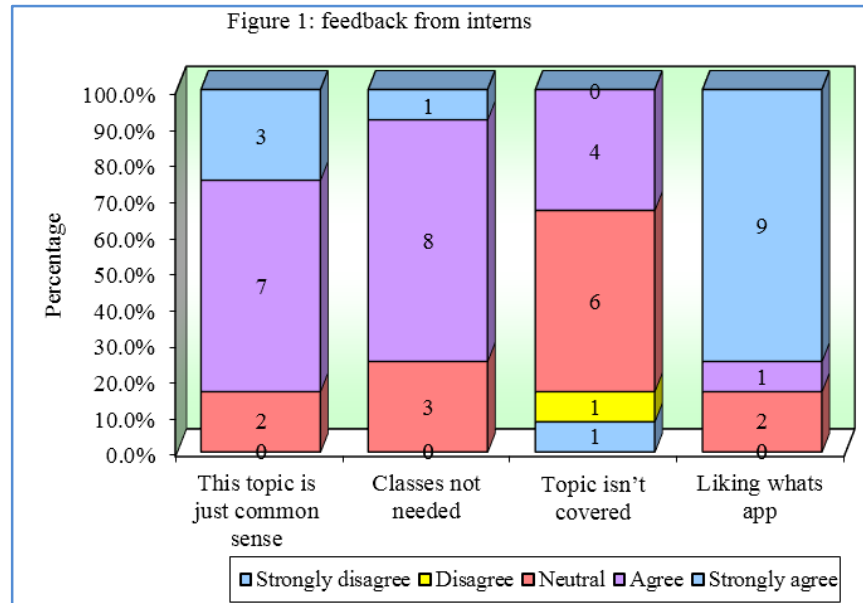
Figure 1
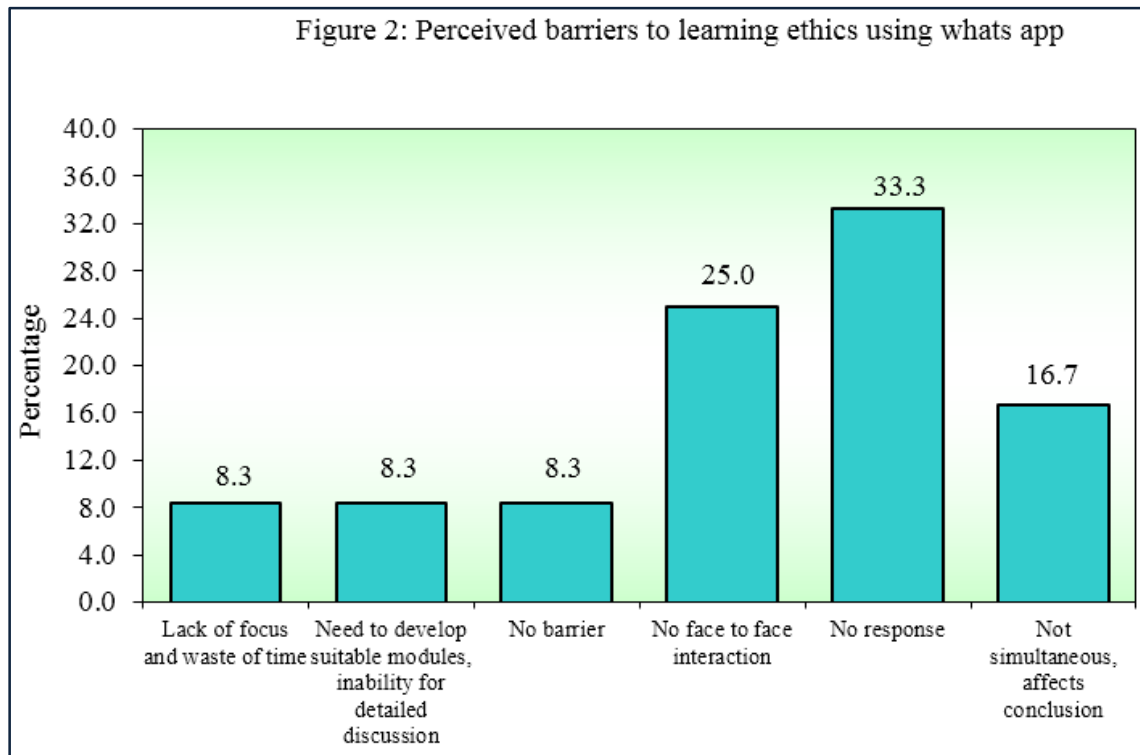
Figure 2

ORIGINAL ARTICLE

REFERENCES:

1. Medical Council of India Regulations on Graduate Medical Education, 2012- www.mciindia.org
2. Mosa AS, Yoo I, Sheets L. A systematic review of healthcare applications for smartphones. BMC Med Inform Decis Mak. 2012 Jul 10;12:67.
3. Cumming AD, Noble S.I.R. Good medical practice. In Walker BR, Colledge NR, Ralston SH, Penman ID (Eds): Davidson's Principles and Practice of Medicine. 22nd edition. Churchill Livingstone Elsevier. 2014.
4. Johnston C, Haughton P. Medical students' perceptions of their ethics teaching. J Med Ethics. 2007 Jul; 33(7): 418–422.
5. George P, Dumenco L, Doyle R, Dollase R. Incorporating iPads into a preclinical curriculum: A pilot study. Med Teach2013; 35(3): 226-30.
6. Boruff JT, Storie D. Mobile devices in medicine: a survey of how medical students, residents, and faculty use smartphones and other mobile devices to find information. J Med Libr Assoc. 2014 Jan; 102(1):22-30.
7. Eggermont S, Bloemendaal PM, van Baalen JM. E-learning any time any place anywhere on mobile devices. Perspect Med Educ. 2013 Mar 30. [Epub ahead of print].

AUTHORS:
1. Archana Dambal
2. Naren Nimbal
3. S. T. Kalsad
4. R. K. Rajashekhar
5. Aruna Bhavane
6. Gajanan Pise
7. Sunanda Halki
8. Siddappa Dhaduti

PARTICULARS OF CONTRIBUTORS:
1. Assistant Professor, Department of General Medicine, Belagavi Institute of Medical Sciences (BIMS), Belagavi.
2. Associate Professor, Department of General Medicine, Belagavi Institute of Medical Sciences (BIMS), Belagavi.
3. Professor and HOD, Department of General Medicine, Belagavi Institute of Medical Sciences (BIMS), Belagavi.
4. Professor and HOD, Department of Physiology, Belagavi Institute of Medical Sciences (BIMS), Belagavi.
5. Associate Professor, Department of Physiology, Belagavi Institute of Medical Sciences (BIMS), Belagavi.
6. Senior Resident, Department of Dermatology, Belagavi Institute of Medical Sciences (BIMS), Belagavi.
7. Assistant Professor and Statistician, Department of Community Medicine, Belagavi Institute of Medical Sciences (BIMS), Belagavi.
8. Junior Resident, Department of General Medicine, Belagavi Institute of Medical Sciences (BIMS), Belagavi.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:
Dr. Archana Dambal,
Assistant Professor,
Department of General Medicine,
(BIMS), Civil Hospital,
Belagavi.
E-mail: drarchanadambal@gmail.com