Module Based Training Improves the Level of Acquaintance with Medical Ethics of Post Graduate Trainees

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Introduction

Medical ethics is the code of conduct for the medical professional in order to render the best possible service to the man kind and to maintain the honor and dignity of the profession.1 The history of medical ethics is from the code of Hammurabi about 2200 BC. Hippocrates - The Greek physician, declared an oath known as Hippocratic Oath within 460 to 377 BC. Thomas Percival -initiated modern principles of medical ethics in 1803. Geneva declaration which was declared in 1948 was accepted by the general assembly of the world medical association in London on October 12, 1949. Till this day, we are abiding by the Geneva declaration with some modification in the course of the age.2 Health care decisions are based not only on clinical and technical grounds, but also on ethical grounds from its era of initial practice. Though clinical and technical aspects are considered largely, ethical issues involved in patient management may be overlooked. A framework of code of conduct governing doctor's decisions and attitude may help to overcome this problem. But they often provide rigid guidelines for a limited number of situations.3 Knowing medical ethics is very important to a medical professional. As there are varieties of reasons, including increasing litigation, changes in complexities in medical practice and the importance of consumer courts.4 Development of Medical ethics is continuing over centuries. In the allopathic system of medicine, such developments commenced from the time of Hippocrates (the Hippocratic oath) and over time has several "codes" have been developed (These include the Helsinki Declaration, World Medical Code and Belmont Report.)5 All doctors must acquire knowledge and understanding of ethical and legal issues in medical practice. He or she also able to understand and analyse ethical problems face 2 the patients, their families and the society. The doctor should have proper regard to such problems in reaching decisions.6 Ethics education is a lifelong process throughout the medical career. It may be safe to assume that most people of medical profession will have their own moral code. Physicians still need to keep up with the increasingly complex ethical dilemmas of modern medicine.7 The Bangladesh Medical and Dental Council (BMDC) was duly constituted under the Medical and Dental Council act No XVI of 1980 on September, 1980 and was empowered to look after – Public interest by maintaining proper medical and dental standards, medical and dental education in the country, maintaining a register of qualified medical /dental practitioners qualifying from duly recognized institutions and taking disciplinary action for criminal convictions or serious professional misconduct of a medical / dental practitioner. The council is not an association or a union for protecting professional interest.8 In Bangladesh, Government laws and regulations control medical practice. A code of conduct has been practised for hundreds of years which governs the way physicians are supposed to perform their professional work. Although Bangladesh Medical & Dental Council (BMDC) introduced Code of Professional Conduct, Etiquette and Ethics, till now It has not been made the part of the undergraduate training in Bangladesh.9 Training module of Medical Ethics has earlier been introduced at undergraduate level in various countries.10 In 1999, the World Medical Association "strongly recommended" to medical schools that the teaching of ethics and human rights should be made compulsory in their curriculum.11 Structured training in medical ethics In Bangladesh t is not well formed till date. And a question may arise - when such training should be imparted? In a case–control study, Papadakis et al. concluded that problematic behavior in medical school is associated with a subsequent disciplinary action by a state medical board.12 In another retrospective cohort study, Papadakis et al. concluded that poor performance on 3 behavioral and cognitive measures during residency is associated with greater risk for state licensing board actions against practicing physicians.13 As medical students in Bangladesh come directly in contact with patient-care under supervision, during their training tenure , it is considered the right time to impart training in medical ethics. World Health Organization suggests "Development of teaching-learning material based on country-specific situations is considered very necessary to make teaching of ethics more relevant in a given context."14 Considering these points, it is that a training module of Medical Ethics for the different level of trainees of Fellowship program is the need of the hour. Thus, in this research projects a module for the different level of trainees of fellowship program in medical ethics in patients' care was designed and standardized through this interventional study and the Outcome of "Module Based Training on Medical Ethics" on Post Graduate Trainees of Fellowship Program in Bangladesh was ascertained.

Materials and Methods

Ethical clearance was taken from the IRB participating centers before starting the study. A module was prepared for the study purpose as well as piloting of the module. The Modules was placed for a group discussion among an external expert group of Chattogram, Bangladesh for further edition(s). After finalization of module, an assessment questionnaire was prepared for pre and posttest assessment for each module. After completion of module preparation and questionnaire, the trainees of BCPS were invited to attend a program with the help of Research, Training and Monitoring Department (RTMD), BCPS. They were invited to attend the training workshop on the scheduled date. A pre-training assessment for Medical Ethics was done by Pretest questionnaire. the trainees' group was gone through all the steps of training module. After completion of training, they were appearing at post training assessment to assess the outcome of the module-based training, using the same instrument.

The pre training assessment scores of candidates were compared statistically with post-training assessment scores by using the Statistical Package for Social Sciences version 25.0 for Windows (SPSS Inc., Chicago, Illinois, USA). The mean values were calculated for continuous variables. the results of paired t test for comparison between pre-test score and post-test scores of experimental and control groups. P values <0.05 was considered as statistically significant.

Results

Table 1: Age and Gender distribution

Gender	N	Percentage	Mean age	SD of Age
Female	11	37.9	32.36	5.537
Male	18	62.1	31.44	4.246
Total	29	100	31.79	4.701
Age range	26-45 years			

N= Number, SD= Standard deviation

Gender distribution reveals most of them was male (62.1%) (Table 1). Mean age of male participants was 31.44 years (SD 4.2) and female participants was 32.36 (SD 5.5). Age range was 26-45 years. Most trainees participated from 1st year 41.4%, and from Internal medicine (58.6%) (Table 2). Figure 1 demonstrates the different qualities of 18 modules

Table 2: Level of training among the different subjects of participants (%)

	Med	GS	ObGyn	Pedi	OMS	Endo	Total
1st Year	10 (34.5)	0	0	1 (3.4)	0	1 (3.4)	12 (41.4)
2nd Year	4 (13.8)	1 (3.4)	0	1 (3.4)	0	0	6 (20.7)
3rd Year	0	1 (3.4)	0	1 (3.4)	0	0	2 (6.9)
4th Year	0	0	1 (3.4)	1 (3.4)	0	0	2 (6.9)
Final year	3 (10.3)	1 (3.4)	2	0	1 (3.4)	0	7 (24.1)
Total	17 (58.6)	3 (10.3)	3 (10.3)	4 (13.8)	1 (3.4)	1 (3.4)	29 (100)

Med=Internal medicine; GS=General Surgery; OBGyn=Obstetrics & Gynaecology; Pedi= Paediatrics; OMS= Oral and maxillofacial surgery; Endo= Conservative and endodontics

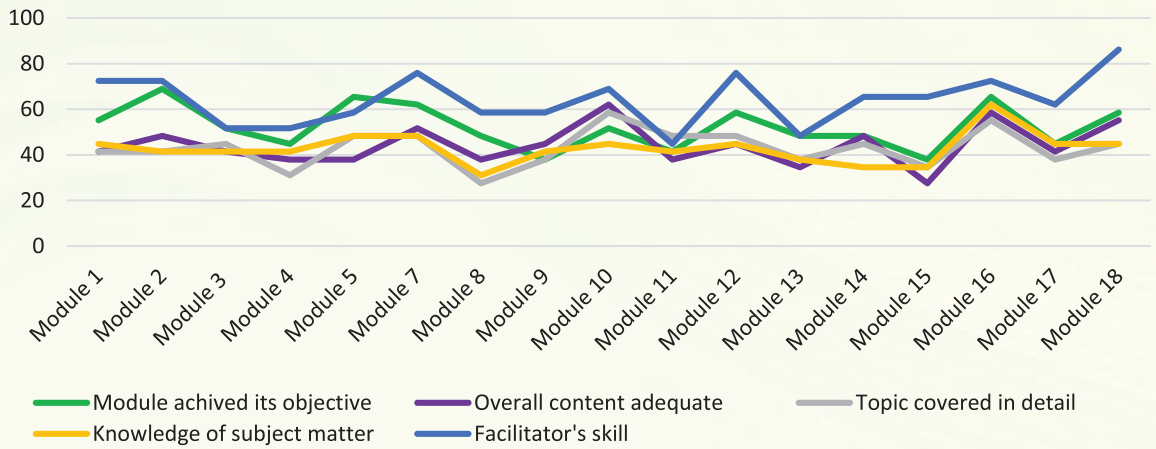

Figure 1: Quality of modules

that was scored 'excellent'. It was found that most of the module scored excellent in the perspective of achieving its objective, knowledge, covering topic and skill of facilitator's skill.

Table 3: comparison pre-test and post-test in various module

Module	Rank	N	Mean Rank	Sum of Ranks	p-value
Module 1 Pre-test Module 1 Post-test	Negative Ranks Positive Ranks Ties	1 26 1	3 14.42	3 375	<0.001
Module 2 Pre-test Module 2 Post-test	Negative Ranks Positive Ranks Ties	3 17 8	12.33 10.18	37 173	0.006
Module 3 Pre-test Module 3 Post-test	Negative Ranks Positive Ranks Ties	6 16 7	6 13.56	36 217	0.003
Module 4 Pre-test Module 4 Post-test	Negative Ranks Positive Ranks Ties	1 22 6	4 12.36	4 272	<0.001
Module 5 Pre-test Module 5 Post-test	Negative Ranks Positive Ranks Ties	7 12 10	6.57 12	46 144	0.044
Module 6 Pre-test Module 6 Post-test	Negative Ranks Positive Ranks Ties	1 25 3	7.5 13.74	7.5 343.5	<0.001
Module 7 Pre-test Module 7 Post-test	Negative Ranks Positive Ranks Ties	3 21 3	5 13.57	15 285	<0.001
Module 8 Pre-test Module 8 Post-test	Negative Ranks Positive Ranks Ties	2 21 4	14.5 11.76	29 247	0.001
Module 9 Pre-test Module 9 Post-test	Negative Ranks Positive Ranks Ties	6 17 5	11.17 12.29	67 209	0.022
Module 10 Pre-test Module 10 Post-test	Negative Ranks Positive Ranks Ties	3 21 4	6 13.43	18 282	<0.001

Module 11 Pre-test Module 11 Post-test	Negative Ranks	0	0	0	<0.001
	Positive Ranks	18	9.5	171	
	Ties	10			
Module 12 Pre-test Module 12 Post-test	Negative Ranks	1	1.5	1.5	<0.001
	Positive Ranks	27	14.98	404.5	
	Ties	0			
Module 13 Pre-test Module 13 Post-test	Negative Ranks	3	4.5	13.5	<0.001
	Positive Ranks	23	14.67	337.5	
	Ties	3			
Module 14 Pre-test Module 14 Post-test	Negative Ranks	0	0	0	<0.001
	Positive Ranks	19	10	190	
	Ties	10			
Module 15 Pre-test Module 15 Post-test	Negative Ranks	4	9.5	38	0.003
	Positive Ranks	18	11.94	215	
	Ties	7			
Module 16 Pre-test Module 16 Post-test	Negative Ranks	0	0	0	<0.001
	Positive Ranks	26	13.5	351	
	Ties	3			
Module 17 Pre-test Module 17 Post-test	Negative Ranks	1	5	5	<0.001
	Positive Ranks	24	13.33	320	

p-value obtained by Wilcoxon sign rank test

Table 4 represents the comparison of pre-test and post-test scores on Wilcoxon rank test of all 18 modules were significant (p-value<0.05).

Discussion

Total 29 trainees completed the 3-work shop completely. Among them 62.1% was male and age range was 24-45 years as it was among the post-graduate medical students. One study showed that age range was 22- 24 years and male prevalence was 34.3%,15 another study was performed in Shiraj University of Medical Science,16 and also among the intern of a medical college of India.17 Trainee came from different year and subjects indicated that the results were not confined to a single training year or subjects (Table 2). Module 2 discussed about “doctors’ professional relationships and duties” (Table 3). Post-test was significantly improved (P-value=0.006). Other study found doctor patient relationship and their importance was described 60% of the attendee agreed with ethical points.18 Module 3 elaborated the “patients’ rights and responsibilities.” After post-test, their knowledge significantly improved (p-value 0.003). In another study, it was found that 57% intern agreed they had not received any formal education regarding patients’ rights. 19 “Patients’ autonomy and consent to treatment” was discussed (module 4) where the post-test result indicated that knowledge regarding this topic highly significantly improved (p-value <0.001) after presentation. Similar dilemma was found in the study of Sathirareuangchai.20 Trainees realized the difference between Privacy and confidentiality in module 5 (P-value 0.044). Study performed in Kathmandu, medical student agreed to keep confidentiality but 43.5% agreed to have ethical dilemma once in a month.21 Another study also go align with current study.22 the module that described “truth telling and breaking bad news” post-test indicated their improvement in this field (p-value<0.001)

which was similar with former study. Similar result was also found in the study of Burn et al.23 Ethical dilemma was posed regarding decision of resuscitation or withdrawing life support in Module 7 and trainees showed significant improvement (p-value <0.001). This result corresponded with the study performed in Pakistan.22 Medical malpractice & errors discussed in another module where their knowledge significantly improved after the workshop (p-value 0.001). Turkish study found better performance who observed and trained in more ethical violation cases.23 Other modules discussed about ethical dilemma regarding emergency medicine, health practitioner relation with healthcare organizations, reproductive health, organ transplantation & donation, public health, genetics, research and resource allocation Whose post-test scores were higher significantly and corresponded with other similar studies performed in various parts of the world.22, 24-30 Last module described the medical code of ethics of Bangladesh.31 Participants evaluated the workshop as well as each module's quality (figure 1). Workshop evaluation is a way of evaluation the quality of it and it was evaluated in various medical ethics workshop.32,33

Limitations:

This study aimed to cover all the possible ethical points for the medical and dental professionals of Bangladesh. Due to resource constraints these modules targeted only cognitive domain of ethical problem. Although this study incorporated trainees of different medical colleges, but they all are confined to Chattogram, a southern city of Bangladesh, more medical colleges from all part of Bangladesh would create a better overview. Sample size was also less due to resource constraints, larger size may give more precise result. Other limitation of the study was the entire sample from the fellowship program of BCPS though a good number of post graduate trainees are enrolled with other different medical universities.

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Conclusion

Exploring on medical ethics is novel in Bangladesh. As a country with huge population and having many medical colleges, this arena was not touched properly. This study took initiative to examine in depth of medical ethics in almost all branches, tried to correlate between Bangladesh and world perspective. After developing 18 modules, study was applied and examined the effect with scoring. Hence even though the small population, small area covered study, it may create a wide impact and guide the medical ethics development specially when our country is in a dire need of ethically sound physician.

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Conflicts of Interest

All the authors declare that there is no Conflict of Interest.

-References

1. Talukder MH, Nazneen R, Hossain MZ, Chowdhury IJ. Basic ideas on medical ethics. Bangladesh Journal of Medical Science. 2010;9(3):131-5.
2. Gracia D. History of medical ethics. Bioethics in a European perspective. 2001:17-50.
3. Doyal L, Gillon R. Medical ethics and law as a core subject in medical education: A core curriculum offers flexibility in how it is taught—but not that it is taught. BMJ. 1998 May 30;316(7145):1623-4.
4. DuBois JM, Burkemper J. Ethics education in US medical schools: a study of syllabi. Academic Medicine. 2002 May 1;77(5):432-7.
5. Brody EF. Medical ethics education: Past, present, and. Acad. Med. 1995;70:761-9.
6. Lakhan SE, Hamlat E, McNamee T, Laird C. Time for a unified approach to medical ethics. Philosophy, Ethics, and Humanities in Medicine. 2009 Dec;4(1):1-6.
7. Editor, T. (2014). Code of Medical Ethics: Guidelines of Bangladesh Medical and Dental Council (BMDC). BIRDEM Medical Journal, 4(1), 1–3. https://doi.org/10.3329/birdem.v4i1.18544
8. Mahbub RE. Medical ethics in Bangladesh. Bangladesh Medical Journal. 2012;41(1):7-7.
9. Islam MZ. Medical negligence: Current position of Malaysia and Bangladesh. World. 2019;8(3):18-21.
10. Mattick K, Bligh J. Teaching and assessing medical ethics: where are we now?. Journal of medical ethics. 2006 Mar 1;32(3):181-5.
11. Ferney-Voltaire Cedex, France: World Medical Association; 2005. World Medical Association. Medical Ethics Manual.
12. Papadakis MA, Hodgson CS, Teherani A, Kohatsu ND. Unprofessional behavior in medical school is associated with subsequent disciplinary action by a state medical board. Journal of Medical Regulation. 2004 Mar;90(1):16-23.
13. Papadakis MA, Arnold GK, Blank LL, Holmboe ES, Lipner RS. Performance during internal medicine residency training and subsequent disciplinary action by state licensing boards. Annals of Internal Medicine. 2008 Jun 3;148(11):869-76.
14. World Health Organization. Module for Teaching Medical Ethics to Undergraduates. Regional office for South East Asia, New Delhi: World Health Organization; 2009.
15. Create and edit modules [Internet]. [cited 2023 May 27]. Available from: https://knowledge.hubspot.com/design-manager/create-and-edit-modules.
16. Ebrahimi S, Alinejad N. The impact of ethics workshop on the ethical knowledge and competency of fourth years medical students of Shiraz University of Medical Sciences. Iranian Journal of Medical Ethics and History of Medicine. 2017 Apr 10;10(1):55-66.
17. Mahajan R, Goyal PK, Sidhu TK, Kaur U, Kaur S, Gupta V. Module for interns in medical ethics: A developmental diegesis. International Journal of Applied and Basic Medical Research. 2017 Dec;7(Suppl 1):S52.
18. Okoye O, Nwachukwu D, Maduka-Okafor FC. Must we remain blind to undergraduate medical ethics education in Africa? A cross-sectional study of Nigerian medical students. BMC Medical Ethics. 2017 Dec;18:1-8.
19. Ebrahimi S, Fozooni H, Hosseini S. Knowledge on Patients' Rights in Medical Interns: A Crucial Stage of Doctor's Initiation. Thrita. 2017;6(2).
20. Sathirareuangchai S. Analysis of Work Assignments After Medical Ethics Workshop for First-Year Residents at Siriraj Hospital. Siriraj Med J. 2016;68:358–62.
21. Aacharya RP, Shakya YL. Knowledge, attitude and practice of medical ethics among medical intern students in a Medical College in Kathmandu. Bangladesh Journal of Bioethics. 2015 Nov 6;6(3):1-9.
22. Burn CL, Hurst SA, Ummel M, Cerutti B, Baroffio A. Telling the truth: Medical students' progress with an ethical skill. Medical Teacher. 2014;36(3):251–9.

23. Baykara ZG, Demir SG, Yaman S. The effect of ethics training on students recognizing ethical violations and developing moral sensitivity. Nursing ethics. 2015 Sep;22(6):661-75.
24. Ozgonul L, Alimoglu MK. Comparison of lecture and team-based learning in medical ethics education. Nursing ethics. 2019;26(3):903–13.
25. Moreira F, Teixeira P, Leão C. Effectiveness of medical ethics education: a systematic review. MedEdPublish. 2021 Jun 15;10(175):175.
26. Shaikh A, Humayun N. Medical Ethics in Undergraduate Medical Education in Pakistan: Towards a Curricular Change. In: Clark DPA, editor. Contemporary Issues in Bioethics. InTech; 2012.
27. Nikravanfard N, Khorasanizadeh F, Zendehdel K. Research Ethics Education in Post⊠Graduate Medical Curricula in IR Iran. Developing world bioethics. 2017 Aug;17(2):77-83.
28. Mohammad M, Ahmad F. Knowledge, Attitudes and Practices of Bioethics among Doctors in a Tertiary Care Government Teaching Hospital in India. Journal Clinical Research & Bioethics. 2011;02(06).
29. Sullivan BT, DeFoor MT, Hwang B, Flowers WJ, Strong W. A novel peer-directed curriculum to enhance medical ethics training for medical students: a single-institution experience. Journal of medical education and curricular development. 2020 Jan;7:2382120519899148.
30. Deo SK, Gupta S, Rimal N, Gurung A, Maharjan A, Shrestha S, et al. Healthcare Ethics among Dental Intern Doctors. 2017;17(2):16–23.
31. Bangladesh Medical & Dental Council (BM&DC). Bangladesh Medical & Dental Council Code of Professional Conduct, Etiquette and Ethics. Dhaka; 2010.
32. Ebrahimi S, Kojuri J, Ashkani-Esfahani S. Early clinical experience: A way for preparing students for clinical setting. Galen Medical Journal. 2012;1(2):42-7.
33. Leventi N, Vodenitcharova A, Popova K, Ivanova K, Georgiev S, Yanakieva A. Students'views On The Role Of Ethics Education For Their Future Medical Practice. Proceedings of CBU in Medicine and Pharmacy. 2021 Oct 24;2:87-91.