ORIGINAL RESEARCH PAPER
Volume-8 | Issue-10 | October - 2019 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

AWARENESS OF BIOETHICS AMONG FIRST-YEAR UNDERGRADUATE MEDICAL STUDENTS IN A METROPOLITAN CITY IN WESTERN INDIA.

Physiology

Rucha Wagh — Assistant Professor, Physiology Department, Rajiv Gandhi Medical College, Kalwa, Thane, Maharashtra, India

Bhattacharya Srabani* — Professor and Head, Physiology Department, Rajiv Gandhi Medical College, Kalwa, Thane, Maharashtra, India *Corresponding Author

Sundaram Kartikeyan — Professor and Head, Community Medicine Department, Rajiv Gandhi Medical College, Kalwa, Thane, Maharashtra, India

ABSTRACT

This before-and-after study (without controls) with educational intervention was conducted at a municipal medical college in in Western India to evaluate the awareness of first-year MBBS students regarding bioethics. The mean score (out of 20) of 31 females and 29 males participants significantly ($p<0.0001$) increased from 13.80 +/- 1.57 (pre-test) to 16.23 +/- 1.62 (post-test). The gender-wise differences in the pre- and post-test scores were not statistically significant and the maximum scores were identical for female and male students. Significant improvement in the post-test scores of participating students implied increased awareness after training in bioethics

KEYWORDS

Awareness, Bioethics, Medical students

INTRODUCTION

Bioethics attempts to scrutinize the ethical extent of making judgments in medical and biological science situations [1]. Teaching bioethics is a wide-ranging and enduring endeavor to facilitate graduate and undergraduate students to become more fully connect to their own ethical principles [2]. The English physician Thomas Percival, in 1803, first used the term "Medical Ethics" in his publication on the expectations and requirements from medical professionals, based on a set of values that they ought to adhere to, when faced with moral or ethical conflicts or dilemmas [3].

Medical students ought to know the procedure of obtaining informed consent and the procedure in patients, who are partially competent or fully incompetent, identify the ethical aspects in medical practice. They need to be taught the procedure to be followed when a patient refuses treatment and the ethical aspects of patient care when the prognosis is poor. [4, 5] The learning outcomes for each activity should be used as a guide to assess the adequacy of achievement of the pre-determined competencies [6].

After the Belmont Report [7] and the indignation following the Tuskegee Syphilis study in the USA [8], four principles of bioethics (autonomy, non-maleficence, beneficence and justice) were established [9]. The first principle of bioethics (autonomy), which arises in the presence of an intention to intervene [10], is implemented through informed and voluntary consent. Irrespective of cost-benefit, cost-effectiveness, or risk-benefit analysis, autonomy should always be respected [11]. The second principle (non-maleficence) signifies consciously refraining from doing harm and is directly related to respect for life, quality of life and non-discrimination [10]. The third principle (beneficence) is the pledge that all human beings must act for the benefit of others [10]. The fourth principle (justice) was visualized as distributive justice, in which, underprivileged individuals have an equal likelihood of access to scarce therapeutic resources [11].

The Medical Council of India has recommended minimum hours are to be allocated at various levels of the MBBS course for the Attitude, Ethics and Communication Module (AETCOM) module training [12]. The module contains innovative methods to teach students to develop ethical and professional attitudes and good communication skills. Though the medical curriculum has been designed to address three domains (cognitive, psychomotor and affective), there is an inclination to give preferentiality to acquiring competencies in the cognitive domain [13]. In the traditional curriculum, there was no formal training and it was expected that expertise in communication, ethical functioning, respect for diversity, empathy and professionalism would be gathered by observing peers or senior teachers [14, 15]. This traditional pattern of medical education failed to produce health care personnel who were adept in providing compassionate holistic health care [13, 16]. Poor skills in the affective domain cause conflicts that can adversely affect patient care and interpersonal relationships in health care settings [17, 18]. In the developed countries, many institutions offer need-based structured and integrated training in bioethics [19].

To strengthen the role of ethics in medical education, it is necessary to devise methods of evaluating performance in attitudes and ethics. The non-simulated patient-doctor encounter can be imitated but is difficult to assess [20]. Medical students are adult learners who have are already been exposed to some level of ethical and moral teaching in their personal lives since their childhood.

The present study was conducted among first-year students of the Bachelor of Medicine and Bachelor of Surgery (MBBS) course to evaluate their awareness regarding bioethics.

MATERIALS AND METHODS

This before-and-after study (without controls) with educational intervention was conducted at a municipal medical college in Thane, Maharashtra, in Western India. First-year MBBS students, aged 18+ years, of either gender, were explained about the study and written informed consent was obtained. The participants took a pre-test (maximum score: 20), which was designed to test the awareness of participants. Subsequently, the students were exposed to training as per AETCOM module [12] and a post-test, identical to the pre-test, was administered.

The pre- and post-test scores were entered in Microsoft Excel (Microsoft Corporation, Redmond, WA, USA) and were statistically analyzed using EpiInfo Version 7.0 (public domain software package from the Centers for Disease Control and Prevention, Atlanta, GA, USA). Categorical data were presented as percentages while continuous data were presented as mean and standard deviation (SD). The 95% confidence interval (CI) was presented as: [Mean-(1.96)*Standard Error)] to [Mean+(1.96)*Standard Error)]. The paired t-test value and Z value (standard error of difference between two means) were computed. Statistical significance was determined at $p<0.05$.

RESULTS AND DISCUSSION

A total of 60 students (31 females: 51.67%; 29 males: 48.33%) participated in the study. Overall, their mean score (out of 20) increased from 13.80 +/- 1.57 (95% CI: 13.40 – 14.20) in the pre-test to 16.23 +/- 1.62 (95% CI: 15.82 – 16.64) in the post-test. The differences were highly significant (paired t-value=8.343; $p<0.0001$). The differences between pre- and post-test scores for females (paired t-value=6.361; $p<0.0001$) and males (paired t-value=5.419; $p<0.0001$) were also highly significant (Table-1).

Though medical students would prefer being taught medical ethics by medical teachers using medical terminology, bioethicists from various disciplines, such as, social sciences should also be involved in the training since a medical teacher tends to emphasize aspects pertaining to his/her own discipline. For instance, teachers from Forensic Medicine would tend to focus more on Medical Jurisprudence [21]. Likewise, most ethics committees have a propensity for emphasizing the ethical protection of human beings in research settings and tend to overlook moral deliberations on clinical cases in clinical settings [22].

Table-1: Pre- and post-test scores (out of 20)

	Females (n=31)		Males (n=29)	
	Pre-test	Post-test	Pre-test	Post-test
Mean	13.58	16.13	14.03	16.34
SD	1.41	1.73	1.72	1.52
95% CI	13.08 - 14.08	15.52 - 16.74	13.41 - 14.66	15.79 - 16.90
Paired t-value	6.361		5.419	
'p' value	0.0001*		0.0001*	

SD = Standard deviation; CI = Confidence interval; *Highly statistically significant

In the pre-test, the maximum and median scores were identical for females and males, though the minimum score was lower for male students. In the post-test, the maximum scores were identical but the minimum score was lower for female students (Figure-1). However, the gender-wise differences in the pre-test (Z=1.103; p=0.269) and post-test (Z=0.500; p=0.616) were not statistically significant (Table-2).

Ethical principles need to be instilled in students of all health science courses so that these inter-dependent systems (medical, nursing, pharmacy, paramedical) work with convergent objectives. The teaching sessions should be participatory and interactive and utilize a combination of methods, such as, traditional lecture, case-based learning, problem-based learning, discussion on narratives and use of audio-visuals [20]. The time to introduce the content of a medical ethics curriculum has been debated in many studies [24, 25]. Though inculcating such values at a receptive age is important, a continuum in teaching of medical ethics is necessary since a medical career requires life-long learning.

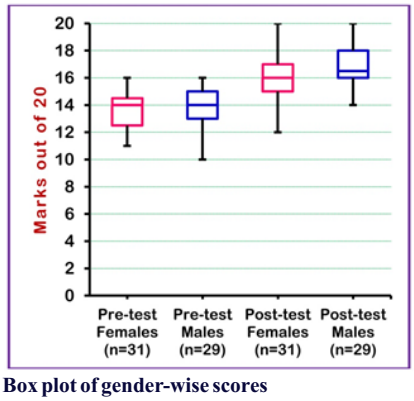

Figure-1: Box plot of gender-wise scores

Table-2: Gender differences in scores (out of 20)

	Pre-test		Post-test	
	Females (n=31)	Males (n=29)	Females (n=31)	Males (n=29)
Mean	13.58	14.03	16.13	16.34
SD	1.41	1.72	1.73	1.52
95% CI	13.08 - 14.08	13.41 - 14.66	15.52 - 16.74	15.79 - 16.90
Z value	1.103	0.500		
'p' value	0.269	0.616		

SD = Standard deviation; CI = Confidence interval;
Z= Standard error of difference between two means

Awareness and attitudes regarding medical ethics are variable and may be strongly influenced by local religious, cultural and socioeconomic factors [26].

CONCLUSION

Present study revealed significant improvement in the post-test scores of participating students, implying increased awareness after training in bioethics. The gender differences in scores were not statistically significant in both the pre- and post-test. The findings of the study cannot be generalized since the sample size of this study was limited due to the number of admissions to the first-MBBS course in this college.

REFERENCES

[1] Gorovitz, S. (1977), "Bioethics and social responsibility". The Monist, 60(1), 3-15.
[2] Taft, S. H., and White, J. (2007), "Ethics Education: Using Inductive Reasoning To Develop Individual, Group, Organizational, and Global Perspectives." Journal of Management Education, 31(5), 614-646.
[3] Beauchamp, T. L., and Childress, J. F. (2013), "Principles of Biomedical ethics." 7th Ed. Oxford: Oxford University Press.
[4] Gillon, R. (1996), "Thinking about a medical school core curriculum for medical ethics and law." Journal of Medical Ethics, 22(6), 323-324.
[5] Fox, E., Arnold, R. M., and Brody, B. (1995), "Medical ethics education: past, present, and future." Academic Medicine, 70(9), 761-769.
[6] El Tarhouny, S. A., Mansour, T. M., Wassif, G. A., and Desouky, M. K. (2017), "Teaching bioethics for undergraduate medical students." Biomedical Research, 28 (22), 9840-9844
[7] Department of Health, Education and Welfare. (1978), "The Belmont report: ethical principles and guidelines for the protection of human subjects of research." Bethesda: US Department of Health, Education and Welfare.
[8] Brant, A. M. (1978), "Racism and research: the case of the Tuskegee Syphilis study." Hastings Center Report, 8(6), 21-29.
[9] Beauchamp, T., and Childress, J. (1979), "Principles of biomedical ethics." 1st edition. New York: Oxford University Press.
[10] Beauchamp, T., and Childress, J. (2001), "Principles of biomedical ethics." (p. 454). 5th ed. New York: Oxford University Press.
[11] Manchola, C. (2017), "Three approaches for a practical bioethics." Rev bioét. (Impr.), 25 (2), 264-274.
[12] Medical Council of India. (2018), "Attitude, Ethics and Communication (AETCOM) Competencies for the Indian Medical Graduate." New Delhi: Medical Council of India: pp. 3-28.
[13] Mitra, J., and Saha, I. (2016), "Attitude and communication module in medical curriculum: Rationality and challenges." Indian Journal of Public Health, 60(2), 95-98.
[14] Johna, S. (2014), "What can we learn from narratives in medical education?" The Permanente Journal, 18(2), 92-94.
[15] Svenberg, K., Wahlqvist, M., and Mattsson, B. (2007), "A memorable consultation: writing reflective accounts articulates students' learning in general practice." Scandinavian Journal of Primary Health Care, 25(2), 75-79.
[16] Modi, J. N., Gupta, P., and Singh, T. (2015), "Competency-based medical education, entrustment and assessment." Indian Pediatrics, 52(5), 413-420.
[17] Braun, U. K., Gill, A. C., Teal, C. R., and Morrison, L. J. (2013), "The utility of reflective writing after a palliative care experience: can we assess medical students' professionalism?" Journal of Palliative Medicine, 16(11), 1342-1349.
[18] Chretien, K., Goldman, E., and Faselis, C. (2008), "The reflective writing class blog: using technology to promote reflection and professional development." Journal of General Internal Medicine, 23(12), 2066-2070.
[19] Goldie, J., Schwartz, L., & Morrison, J. (2000), "Process evaluation of medical ethics education in the first year of a new medical curriculum." Medical Education, 34(6), 468-473.
[20] Rameshkumar, K. (2009), "Ethics in medical curriculum; Ethics by the teachers for students and society". Indian Journal of Urology, 25, 337-339.
[21] Ravindran, G. D. (2008), "Medical ethics education in India." Indian Journal of Medical Ethics, 5(1), 18-19.
[22] Steinkamp, N. L. (2003), "European debates on ethical case deliberation." Medicine, Health Care and Philosophy, 6(3), 225-226.
[23] Selvakumar, D., and Joseph, L. B. (2004), "The importance of including bio-medical ethics in the curriculum of health education institutes." Education for Health (Abingdon), 17, 93-96.
[24] Miyasaka, M, Akabayashi, A, Kai, I, and Ohi, G. (1999), "An international survey of medical ethics curricula in Asia." Journal of Medical Ethics, 25(6), 514-521.
[25] Khizar, B., and Iqbal, M. (2009), "Perception of physicians and medical students on common ethical dilemmas in a Pakistani medical institute." Eubios Journal of Asian and International Bioethics, 19(2), 53-54.