**Title: Knowledge and attitude about medical ethics among junior medical graduates in a tertiary care hospital, Manipur: A cross-sectional study**

Bishwalata Rajkumari, Haobam Danny Singh,\* Ojit Khaba, Tamphasana Thounaojam

**Short title:** Rajkumari B\_ Knowledge attitude medical ethics

**Authors’ details:**

1. Dr Bishwalata Rajkumari, Associate Professor, Department of Community Medicine, Jawaharlal Nehru Institute of Medical Sciences, Imphal, Manipur-795005

**e-mail**: [dr.bishwalata@rediffmail.com](mailto:dr.bishwalata@rediffmail.com) , **Phone:** +91 9436038764

1. Dr Haobam Danny Singh,\* Tutor, Department of Community Medicine, Jawaharlal Nehru Institute of Medical Sciences, Imphal, Manipur-795005

**e-mail:** [haobamdanny@yahoo.com](mailto:haobamdanny@yahoo.com), phone: +91 9856164962

1. Dr Khaba Ojit, Post Graduate Trainee, Department of Community Medicine, Jawaharlal Nehru Institute of Medical Sciences, Imphal, Manipur-795005

**Email:** [drojitkhaba@rediffmail.com](mailto:drojitkhaba@rediffmail.com) , phone: +91 9612964595

1. Dr Tamphasana Thounaojam, Post Graduate Trainee, Department of Community Medicine, Jawaharalal Nehru Institute of Medical Sciences, Imphal, Manipur-795005

**Email:** [tam13579chan@gmail.com](mailto:tam13579chan@gmail.com) , phone: +91 9774731837

**Corresponding author:**

Dr Haobam Danny Singh,\* Tutor, Department of Community Medicine, Jawaharlal Nehru Institute of Medical Sciences, Imphal, Manipur-795005

**e-mail:** [haobamdanny@yahoo.com](mailto:haobamdanny@yahoo.com), phone: +91 9856164962

**Conflict of interest: None**

**Sources of funding: Nil**

**Previous presentation or submission**: NONE

**Abstract:**

Conventional medical training offers students little help in resolving the ethical dilemmas they will encounter as healthcare professionals. After completing their studies, healthcare professionals are expected to know ethical principles and apply them in their clinical practices. Hence this cross-sectional study was conducted to assess knowledge and attitude about medical ethics as well as to determine the factors influencing knowledge level among junior medical graduates comprising of internees, junior residents and post-graduate trainees in a tertiary care hospital and medical institution in Manipur, India. A pretested, semi-structured, self-administered questionnaire consisting of participants’ information and questions related to knowledge and attitude was used. Approval of the institutional Ethics committee was obtained for the study. Data was entered in Microsoft excel sheet and analysed using SPSS version 20. Descriptive statistics and analytical statistics such as t-test and ANOVA were used. A p value of <0.05 was considered as statistically significant. Out of 311 participants, 257 responded (82.6%). The mean ages of the participant were 26.4±3.1. Overall, 67(26.1%) respondents have good knowledge about medical ethics. Age ≥27 years (p-value=0.036) and being a post-graduate trainee (p-value=0.008) were significantly associated with higher knowledge about medical ethics. Majority of the respondents have a positive attitude towards medical ethics. There is an urgent need to include practical education about medical ethics in medical curricula and increase sensitisation of health professionals by organising workshops and CME programs on Medical ethics.

**Keywords:** Medical ethics, Medical graduates, Knowledge, Attitudes.

**INTRODUCTION**

Ethics has been defined as “the moral principles that govern a person’s behaviour or how an activity is conducted” and medical ethics as “the branch of knowledge concerned with moral principles”.1 Principles of medical ethics can facilitate the training of physicians, improve their knowledge of biomedical research, and guide their clinical practice. These principles need to be coherent, clear, accurate, logical, compatible, and measurable.2Medical ethics consists of four fundamental principles including autonomy, beneficence, non-malfeasance, and justice.3

Recently, in India, as the medical profession has been brought under “Consumer Protection Act”,4 there have been increasing complaints of poor ethical conduct against healthcare practitioners. This may be due to increased public awareness and inappropriate practices by the healthcare professionals.In medicine, professionalism connotes not only knowledge and skills, but also character, especially compassion and ethics.5Ethical dilemmas are usually encountered in areas such as abortion, contraception, treatment of a patient with a terminal illness, professional misconduct, maintaining patient’s confidentiality, religion, traditional medicine, conflict of interests etc. The conventional medical course offers junior medical graduates little help in resolving the ethical dilemmas which they may encounter as healthcare professionals. Training in medical ethics has been made mandatory in the undergraduate curriculum by the regulatory body of medical education, the Medical Council of India (MCI). Medical Council of India in 2002 released its code of ethics which was a regulatory document on professional conduct, etiquette, and ethics of doctors.6

Significant proportion of doctors are still unaware of health care ethics as shown by previous studies.1,7,8,9 There are limited studies regarding knowledge and attitude about medical ethics among doctors in Manipur. Hence, this study was conducted to assess the knowledge and attitude about medical ethics among junior medical graduates in a tertiary care hospital and medical institution in Manipur, North-east India.

**Material and methods:**

This was a cross-sectional study conducted among junior medical graduates of Jawaharlal Nehru Institute of Medical Sciences (JNIMS), Imphal East, Manipur during the month of November and December 2018. The study population comprised of internees, junior residents and post-graduate trainees.

**Sample size and sampling**: The study aims for universal coverage of all the target population currently working in the institution. Those who were not willing to participate and those who could not be contacted after 2 visits were excluded from the study.

**Study tools:** A semi-structured, self-administered questionnaires adapted from previous studies8-11 were developed by the research team. The questionnaires were pre-tested among a group of internees posted in the department and necessary modifications were made. It consists of three sections. The first section consists of the participants’ information. In the second section, there were 14 knowledge related questions, out of which 13 questions carry 1 mark each for each correct response and the last question is open ended with 4 correct responses carrying 1 mark each. Therefore, the total knowledge score is 17. The third section consists of 14 attitude related questions which is measured on a three point Likert Scale: Agree, Disagree and Not sure.

**Operational definition**: Out of the total knowledge score of 17 those scoring more than 10 were classified as having Good/Adequate knowledge about Ethics and those scoring ≤ 10 as having Poor/Inadequate knowledge. This cut-off score was decided after discussions with senior faculty members of the department and members of the institutional ethics committee.

**Data collection:** Before data collection, verbal informed consent was taken from each participant. The questionnaires were administer to the willing participants and were asked to complete and return on the same day. The filled up questionnaires were then checked for completeness and consistency. Data were entered in Microsoft excel sheet and analysis was done using SPSS version 20. Descriptive statistics like mean, SD, percentages were used. Analysis was done by using t-test and ANOVA. A p-value of <0.05 was considered as statistically significant.

**Ethical issues**: The study was granted an exempt review by the Institutional Ethics Committee vide letter No. Ac/04/IEC/JNIMS/2018(157) dated 20th Nov 2018 for Protocol No. 157/50/2018. No direct identifiers were collected and strict confidentiality was maintained for collected data.

**RESULTS**

Out of the total of 311 junior doctors 257 responded giving a response rate of 82.6%. The mean(SD) ages of the participants were 26.4±3.1 years and median age was 27 years. Male comprised about 45.9% (118), while Post graduate trainees constitute 33.1% of the respondents. Only about 7 (2.7%) participants passed MBBS before 2010.

In response to some of the knowledge questions on medical ethics about 82.1% (211) of the participants were aware that there is an ethics committee in the institution. When enquired “who enforce the code of medical ethics in India?” about 43.2% (111) of the participants either ‘did not know’ or answered incorrectly. When asked “what is the apex body in India for the formulation and promotion of biomedical research?” only 42.8% (110) responded correctly. Only about 52.9% (136) of the participants knew that the approval of institutional ethics committee is required for conducting a medical research project. About 26.1% (67) knew that a medical practitioner should participate in at least 30 hours in CME programs every 5 years to maintain good clinical practice. Very few participants knew about the four principals of biomedical ethics (10.5%, 8.2%, 8.9% and 10.1% in autonomy, beneficence, non-malfeasance and justice respectively).

The knowledge score obtained ranges from 2 to 16 with a mean (SD) score of 8.8±2.8. Table 1 shows the knowledge level about medical ethics among the participants. Overall, 26.1% (67) of the participants have good knowledge about medical ethics.

Table 2 shows the responses to some attitude questions on medical ethics. Majority (212, 82.5%) of the participants disagreed that confidentiality is not an important aspect of treatment.

Post-graduate trainees have significantly higher knowledge score as compared to JRs, interns (p=0.008). No significant association was found between knowledge score with gender of the participants.(Table 3)

|  |
| --- |
| Table 1: Knowledge level about medical ethics among the respondents |
| |  |  |  | | --- | --- | --- | | **Designation** | **Knowledge level** | | | **Good**  **N(%)** | **Poor**  **N(%)** | | Interns (n=121) | 30 (24.8) | 91 (75.2) | | Junior Residents (n=51) | 10 (19.6) | 41 (80.4) | | PGTs (n=85) | 27 (31.8) | 58 (68.2) | | All (n=257) | 67 (26.1) | 190 (73.9) | |

|  |
| --- |
| Table 2: Response to some attitude questions on medical ethics |
| |  |  |  |  | | --- | --- | --- | --- | | **Attitude questions** | **Agree**  **N (%)** | **Disagree**  **N (%)** | **Not sure**  **N (%)** | | Confidentiality is not an important aspect of treatment. | 36(14%) | 212(82.5%) | 9(3.5%) | | Doctors are allowed to run their own chemist shop for selling medicine and surgical appliances. | 59(23%) | 152(59.1%) | 46(17.9%) | | A physician should, as far as possible, prescribed drugs with generic names preferably in capital letters. | 219(85.2%) | 28(10.9%) | 10(3.9%) | | It is not a violation of code of conduct for doctors receiving any monetary grants from any pharmaceutical industry for individual purpose. | 51(19.8%) | 157(61.1%) | 49(19.1%) | | If a terminally ill patient wishes to die, he/she should be assisted in doing so. | 78(30.4%) | 119(46.3%) | 60(23.3%) | |

**Table 3**: Association between knowledge score with gender, age and designation of the participants

|  |  |  |  |
| --- | --- | --- | --- |
| Characteristics | | Knowledge score (Mean±SD) | P-value\* |
| Gender | Male | 9.00 (2.66) | 0.276 |
| Female | 8.61 (2.98) |
| Age | Upto 27yrs | 8.51 (2.89) | 0.036 |
| 27 yrs and above | 9.27 (2.70) |
| Designation | Interns | 8.53 (3.02) | 0.008 |
| JRs | 8.16 (3.15) |
| PGTs | 9.54 (2.18) |

\*Independent sample t-test for gender and age, one-way ANOVA for designation

**DISCUSSION**

It was observed in previous studies 10,11,12 that senior doctors (consultants and senior residents) have comparatively better knowledge of medical ethics than the junior graduates because of knowledge gained through their real life experiences during medical practice; frequent exposure or participation as delegates, keynote speakers in workshops, continuing medical education (CME), and conferences on medical ethics. Hence, the present study was confined on assessing the knowledge and attitude about medical bioethics among junior medical graduates only.

In the present study, the mean age of the participant was 26.4±3.1years which was comparatively lower than the mean age in a previous study9 and relatively higher than those found in other previous studies.7,13 In this study, female (54.1%) outnumbered male doctors which were in contrast with the findings of previous studies.9,11,13 A similar finding of female predominance was found in a previous study done by Iswarya S et al.7

In the present study, majority (82.1%) of the participants were aware of the existence of an Institutional Ethics Committee (IEC). This awareness level was more in the present study when compared with the awareness level found in previous studies.8,11 This higher awareness level could be because of their previous exposure to medical research projects carried out during undergraduate and as well as during postgraduate trainings. This was also supported by the findings that more than half of the participants were aware that a prior approval from IEC is mandatory before conducting a medical research in the institute. Nearly half of the participants did not know that Medical Council of India (MCI) enforces the code of medical ethics in India. In the present study, only 26.1% participants correctly reported that a medical practitioner should participate in at least 30 hours in CME programs every 5 years according to MCI Code of Ethics6 guideline. This finding was higher compared to the finding (15.3%) of a study done by Brogen SA et al.11 This highlights the lack of participation in CME programs by junior medical graduates. It further highlights the importance of periodic training of doctors on bioethics through conferences, CME or workshops in the institution. More than half of the participants in the present study did not know about Indian Council of Medical Research (ICMR) which is the apex body in India for the formulation and promotion of biomedical research. This emphasizes the importance of teaching doctors about biomedical research ethics in addition to medical code of ethics. This is further supported by the present study’s finding which showed that only a few participants had good knowledge about the four basic principles of biomedical ethics namely autonomy, beneficence, non-malfeasance and justice.

In the present study, majority (82.5%) of the participants disagreed that confidentiality is not an important aspect of treatment. Similar observation (81.3%) was also found among physicians in a study done by Chopra M et al.12 In the present study, more than one fifth (23%) of the participants had a misconception that physicians are allowed to run their own chemist shop for selling medicines and surgical appliances. This reflects their limited knowledge on Code of Ethics and/or possibly might be misled after witnessing few physicians involving in such practice. This is an area of concern and need to be addressed in time to avoid criticisms against healthcare practitioners. In the present study, majority (85.2%) of the participants agreed that doctors should prescribe drugs with generic names in capital letters during their practice. This finding was better in comparison with the finding of a study (30.3%) done by Iswarya S et al.7 This better attitude could be explained by the fact that the MCI or the State Medical Councils had issued instructions to all health centres to ensure that there is a rational prescription and use of generic drugs. In the present study, more than half (61.1%) of the participants were uncertain that receiving any monetary grants from any pharmaceutical industry for individual purpose is a violation of code of conduct for doctors. This further reflects the lack of in-depth knowledge about medical ethics and the influences of pharmaceutical companies. Surprisingly, the present study revealed that more than one fourth (30.4%) of the participants agreed to physician-assisted death for terminally ill patient who wishes to die. A study done by Chopra M et al12also reported that 16.4% physicians agreed to assist terminally ill patients to die if they wish so. However, nearly 90% of participants in a study done by Adhikari S et al14 were against physician-assisted death. In the present study, there was no statistically significant association between knowledge score and gender of the participants (p=0.276). Similar finding was observed in a study done by Janakiram C et al.9 However, participants age ≥ 27 years and postgraduate trainees (PGTs) in the present study had significantly higher knowledge score as compared to those participants below 27 years and JRs/ interns. This may be due to the fact that PGTs and senior doctors were more likely to have been exposed to academic activities like CME, workshops, seminars, and thesis works which are directly or indirectly related to bioethics.

The limitation of the study is thatduring data collection, some participants were busy at their work and so returned the questionnaires late. This might reduce validity of the information provided as some of them might still use internet or other sources to answer questions especially those assessing knowledge.

**Conclusion:** To conclude, about a quarter of the junior doctors have good knowledge about medical ethics and majority have positive attitude towards it. However in some issues like receiving monetary grants from pharmaceutical industry and running their own chemist shops, about one-fifth considered it ethical. There is an urgent need to include practical education about ethics in medical curricula. Measures like CME, conferences, workshop on health care ethics would assist in bridging this gap. A test on the code of ethics at the time of registration could also be considered.

**Acknowledgements**:

The authors would like to express gratitude to all the participants for their co-operation during the study.

**Funding**: NIL

**Conflict of interest**: NIL

**References:**

1. Catherine Soanes (editor). The Compact Oxford Reference Dictionary. Oxford University Press;2001[c16].
2. Page K. The four principles: can they be measured and do they predict ethical decision making? BMC Med Ethics 2012;13:10. doi:10.1186/1472-6939-13-10.
3. Beauchamp TL and Childress JF. Principles of Biomedical Ethics. 5th ed. New York: Oxford University Press; 2001.
4. Prakash C, Roy Chaudhari SK, Bala R, Shrivastav B, Rai A, Roham. Consumer Protection Act (CPA / COPRA) related to medical profession. JIAFM. 2007; 29(3):39-41.
5. Moser RH. A few thoughts about professionalism (editorial). South Med J 2000;93:1132-33.
6. MCI. Indian Medical Council. Professional Conduct, Etiquette and Ethics Regulations, 2002. Gazette of India. 2002;Part-III-Sec-4.
7. Iswarya S and Bhuvaneshwari S. Knowledge and attitude related to medical ethics among medical students. Int J Community Med Public Health 2018;5(6):2222-25.
8. Mohammad M, Ahamad F, Rahman SZ, Gupta V, Salman T. Knowledge attributes and practices of bioethics among doctors in Tertiary care government teaching hospital in India. J Clinic Res Bioeth 2011;2:118-20.
9. Janakiram C, Gardens S, knowledge, attributes and practice related to healthcare ethics among medical and dental postgraduate students in south India. Indian journal of medical ethics 2014;XI(2):99-104.
10. Singh S, Sharma PK, Bhandari B, Kaur R. Knowledge, awareness and practice of ethics among doctors in tertiary care hospital. Indian J Pharmacol 2016;48:89-93.
11. Brogen SA, Rajkumari B, Laisharam J, Joy A. Knowledge and Attitude of Doctors on Medical Ethics in Teaching Hospital Manipur. Ind J Med Ethic 2009;6(4):194-7.
12. Chopra M, Bharadwaj A, Mitha P, Sign A, Siddiqui A, Rajesh PR. Current status of Knowledge, Attitude ad Practices towards Healthcare Ethics among Doctors and Nurses from North India-A Multicenter Study. JKIMSU 2013;2(2):102-7.
13. Chatterjee B, Sarkar J. Awareness of medical ethics among undergraduates in a West Bengalmedical college. Ind J Med Ethic 2012; IX(2):93-9.
14. Adhikari S, Paudel K, Aro AR, Adhikari TB, Adhikari B, Mishra SR.Knowledge, attitude and practice of healthcare ethics among resident doctors and ward nurses from a resource poor setting, Nepal. BMC Medical Ethics 2016;17:68.