TITLE OF THE ARTICLE: Participatory method of teaching bioethics in medical education: A Quasi-experimental study.

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**ABSTRACT:**

The concepts of Bioethics when taught by a participatory style featuring moral games, it empowers the learners to have enhanced understanding of Bioethics. Hence this study was undertaken to assess the effect of participatory teaching among medical interns in a tertiary hospital in Chennai. A Quasi experimental study was conducted by teaching ethics through moral games like donut, hot seat, and whispers on 30 medical interns. Out of 30 Interns, 23 subjects were never taught about Bioethics at all. The mean score of moral sensitivity was 9.43 ± 0.85 for female students and 7.9 ± 0.5 for male students. After the moral games the scores on understanding patient rights, and empathy has increased significantly (p<0.05). With the increasing challenges in ethical situations of clinical environments, it is essential to improve the knowledge on bioethics to medical students by using simpler methods of teaching like moral games.

**Key words:** Bioethics, Medical Education, Curriculum development, Moral games, quasi experiment.

**INTRODUCTION:**

Globally, the medical practice has been commercialized in order to accommodate the health needs of the people, while at the same time, medical ethics has taken a backseat. Bioethics, even though not popular, needed to be the most essential part of the medical curriculum.

Bioethics could be defined as the study of ethical issues and decision making associated with the use of living organisms that includes both medical ethics and environmental ethics. Bioethics is learning how to balance different benefits, risks and duties. Concepts of bioethics can be seen in literature, art, music, culture, philosophy, and religion, throughout history.1 These concepts when taught by a participatory style featuring moral games, it empowers the learners to have enhanced understanding of Bioethics.2

Ethics teaching has been shown to have a significant influence on the professionalism and moral qualities of medical professionals3. Various methodologies have been tried to stimulate better ethical conduct in health professionals, such as lectures, seminars, interactive workshops, and case conferences. The effectiveness of clinically-oriented learning approaches is well documented.4

Teaching bioethics is a comprehensive and long-term effort helping medical students to become more skilled and knowledgeable in their clinical training and practice by rooting it to their own personal principles. The nature and content of this field remains very complicated, puzzled and unclear which impairs the efficiency of medical education process. This ambiguity in the subject causes more argument over designing the curriculum, teaching and assessment methods of the course.5

Hence, an attempt is made to identify a simplistic and easier method of teaching such a complicated subject like Bioethics to the medical interns of a tertiary care hospital, using tools such as moral games, and thereby assessing the effectiveness of the tool.

**METHODOLOGY:**

**Study design:** Quasi experimental study to assess the effect of teaching ethics through moral games like donut, hot seat, and whispers.

**Study participants:** Medical interns in their community medicine posting after obtaining informed consent.

**Sample size:** Thirty

**Study duration:** August to October 2019.

**Study Tool:** A Structured close ended questionnaire was used to assess the study participants knowledge on ethical areas like confidentiality, patient’s rights. altruism and empathy. The responses were dichotomous in nature. The study participants were evaluated before and after the moral games.

**Intervention:** Thirty medical interns were divided into three batches of ten interns each, and they were involved in three different moral games namely: donut, whisper and hot seat.

***Donut:*** Two circles of people with pairs facing each other. The pairs dialogue for 1 minute each on an ethical dilemma they have experienced or learnt during their academic years, and then one of the circles shifts around two persons so that new pairs are made.

***Hot seat:*** Medical case scenarios will be read out to the participants and one among them explore and solve the ethical issue in the scenario from the “Hot Seat”.

***Whispers:*** A pre written statement will be whispered from the first intern to the last, who then repeats the statement aloud to everyone.

**Statistical analysis:** The mean and standard deviation were used for describing quantitative data and for qualitative data, the number and percentage were used. To compare the moral sensitivity scores before and after education, the paired t-test and chi-square test were used to correlate ethical sensitivity by gender. The results were considered to be significant at p < 0.05. Data analysis was performed using IBM SPSS 21.0 software.

**RESULTS:**

Out of the Thirty interns, 18 were females and 12 were males with a mean age of 22.1±0.89 years. And 23 interns have not heard or learnt about bioethics during their academic period.

While only few interns had known about bioethics, all of them understood that it was a necessary and desirable subject for formal training. After conducting the moral games, all the medical interns has responded that these kind of interactive teaching formats were the most preferred way of teaching such a complicated subject.

Before participating in the moral games, the subjects were given a choice of five formats for teaching bioethics. They have opted in the following way.(Table 1)

Table 1: Preferred format for teaching of Bioethics

|  |  |  |  |
| --- | --- | --- | --- |
| **Format** | **First Preferred** | **Second Preferred** | **Not Preferred** |
| Lecture | 0 | 1 | 29 |
| Case-based | 5 | 5 | 0 |
| Role play | 7 | 5 | 0 |
| Video examples | 5 | 3 | 0 |
| Small group discussion | 2 | 2 | 1 |
| Moral games | 11 | 14 | 0 |
|  | 30 | 30 | 30 |

The least ideal way of teaching bioethics was found to be lecture method by 29 participants, while the most preferred was moral games. Role play and case studies were found to be second preferred way of teaching for the medical interns about bioethics.(Table 1)

A Questionnaire was used to test the participants knowledge both before and after the moral games. Scoring of the questions was done in four ethical areas like doctor-patient confidentiality, patient’s rights, altruism and empathy. The mean score of moral sensitivity was 9.43 ± 0.85 for female students and 7.9 ± 0.5 for male students. There was no significant difference between gender and student moral sensitivity scores using the chi-square test (p = 0.18). (Table 2)

Table 2: Comparison of scores before and after moral games training

|  |  |  |  |
| --- | --- | --- | --- |
| **Components** | **Before (mean±SD)** | **After (mean±SD)** | **P value** |
| Patient rights | 7.8±1.10 | 9.23±0.48 | 0.04\* |
| Confidentiality | 9.3±0.34 | 9.5±0.44 | 0.67 |
| Empathy | 8.3±0.46 | 10.6±0.31 | 0.00\* |
| Altruism | 7.3±0.19 | 8.2±0.11 | 0.59 |

\*p<0.05 is considered significant

After the moral games the scores on understanding patient rights, and empathy increased significantly (p<0.05), whereas the change in scores of Altruism and confidentiality were not significant.

**DISCUSSION:**

This study aimed to evaluate the medical ethics education provided prior to clinical training through the perspectives of the students, as well as offering suggestions for the curriculum as a whole. All the medical interns were willing to actively participate in all the moral games, express their opinions in fair and direct manner, which shows us that this method of teaching is preferred over the lectures. All the students expressed positively when asked about the necessity of the bioethics curriculum as part of their teaching program. Similar results were seen in a study conducted in turkey, which showed that the most frequently expressed reason was that medicine was a discipline dealing with humans and human healthcare.6

# The present study has found out that the most preferred format for teaching bioethics could be through the moral games, while the least preferred way is through lecture. A study was done to develop a bioethics curriculum for medical students by Greenberg et al., which showed that the students had clearly favored teaching methods that were interactive and that have minimized frontal, didactic instruction.7

In our study, the study participants were involved in active learning of bioethics through games to prepare medical students to deal with ethically challenging situations in the clinical environment. All the students showed improved knowledge after conducting the moral games. This is in concordance with a study done by Tanner and Christen, who have shown how serious moral games could help in better understanding and application of moral behaviour among medical students.8

Our study findings showed significant improvement in the mean score of the participants and also the item wise analysis showed marked improvement in the response. Another similar study conducted in Mumbai on the students showed positive outcome after participating in a bioethics workshop. This confirms the earlier theories about the medical education and improvement in the ethical practices. The interactive sessions are more effective than the regular text-book oriented education.9 Many similar studies have shown an optimistic landscape for the effectiveness of games in nursing education for teaching bioethics.10,11

**CONCLUSION:**

Critical thinking capacity is essential for empowering persons to cope with changing times. Critical thinking should not only promote the creation of ideas but also the formation and adoption of humane moral values while treating patients, or while forming social decisions with regard to human health and life. And participatory games can promote the creation of ideas, individuality, and critical thinking which doctors need in the era of globalization. Hence teaching Bioethical principles in a participatory fun way through means of moral games can be incorporated into the undergraduate medical curriculum.

### **LIMITATIONS:**

This was a study done only on a single cohort of 30 medical interns.

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