

Contribution of ethical reasoning learning sessions on medical training

Apport d'une séance d'apprentissage du raisonnement éthique appliquée à la psychiatrie dans la formation des étudiants en médecine

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ABSTRACT

Introduction: Ethical reasoning is an important skill for all physicians who often face complex ethical dilemmas in their daily practice. Therefore, medical training should include methods for learning ethical theories and concepts, as well as how to apply them in practical situations.

Aim: Assess the contribution of an Ethical Reasoning Learning session to fifth medical students' training through a comparison of results of the same objective and structured clinical examination (OSCE) in the form of simulated interview before and after sessions.

Methods: Four 45- minutes' sessions of Ethical Reasoning Learning (ERL) were implemented during a psychiatry internship for four groups of 5th-year students of the faculty of medicine of Monastir (Tunisia). Each session was divided into 7 parts: introduction, reading of a clinical vignette, brainstorming concerning the problems posed by this clinical situation, classification of the problems, identification of the principles of medical ethics, construction of the ethical matrix, and a conclusion.

Results: Fifty-seven students participated in the study divided into 4 groups. We found a significant difference in the means of the OSCE scores before and after the ERL session and a significant difference between the probability of respecting medical secrecy during pre and post-ethical reasoning learning sessions ($p < 0.001$). We have found an effect of ERL sessions on the acquisition of this ethical competence by medical students.

Conclusion: We learned that an ERL session has improved medical training in ethics applied to psychiatry. Other sessions dealing with other ethical skills are necessary to confirm these results.

Key words: Learning, Clinical Reasoning, Ethical Issues, Psychiatry, Medical Education

RÉSUMÉ

Introduction: Le raisonnement éthique est une compétence cruciale pour tous médecins qui sont souvent confrontés à des dilemmes éthiques dans leur pratique quotidienne.

Objectif: Dans ce cadre, nous avons proposé dans ce travail d'introduire des séances d'ARE appliquées à la psychiatrie dans la formation des étudiants afin d'évaluer leurs apports dans la formation des étudiants DCEM3.

Méthodes: Une étude transversale analytique, menée au service de psychiatrie de Monastir, pendant le premier trimestre de l'année universitaire 2022-2023. Nous avons intégré des séances ARE au stage hospitalier de psychiatrie pour les étudiants DCEM3. Nous avons évalué l'apport de ces séances à travers une comparaison des scores d'un ECOS sous forme d'un entretien simulé fait en pré puis en post-ARE.

Résultats: Notre population d'étude était faite de 57 étudiants répartis en 4 groupes. Nous avons trouvé une différence significative des moyennes des scores d'un ECOS sous forme d'une simulation médecin-entourage d'une patiente, avant et après ARE avec un effet significatif de la séance sur l'évaluation générale et sur la non divulgation du secret médical lors de l'ECOS.

Conclusion: Notre étude, et au-delà de ses limites, a permis d'objectiver l'apport d'apprentissage par des séances ARE dans la formation médicale. Afin d'évaluer plus précisément l'impact des mises en situation sur le comportement professionnel, il serait intéressant de réaliser d'autres travaux.

Mots clés: Apprentissage, raisonnement clinique, éthique, psychiatrie, étudiants en médecine

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INTRODUCTION

The practice of medicine is not limited only to the mission of care. Every doctor is required, within the framework of his profession, to respect the ethical pillars, initially set out by Hippocrates, which remain the basis of medical practice: doing good, probity of the doctor who must exert all in his powers to preserve the patient, to do no harm, respect sick people, respect medical secrecy and ensuring fairness. These principles affirm the primacy of the person, and insist on respect for human life, the dignity and freedom of the individual [1,2].

Ethical reasoning is, therefore, a crucial skill for all physicians who often face complex ethical dilemmas in their daily practice. This reasoning is based on fundamental ethical principles such as respect for the autonomy of patients, non-maleficence (or the action of not harming, causing problems or undesirable effects), beneficence (or the action of doing good), and justice or equity (or the obligation to treat equal cases in the same way) [3].

Medical education must consider this need for permanent ethical questioning of doctors and future doctors. It involves acquiring knowledge about ethical theories and concepts, as well as how to apply them in practical situations [4]. To meet this objective, pedagogical methods can be proposed including Ethical Reasoning Learning (ERL) [3].

Ethical Reasoning Learning consists in offering the learner real clinical situations with ethical questions which will encourage him to mobilize his declarative and conditional knowledge to solve problems. This learning is done through interactive sessions dealing with an ethical dilemma that promotes cognitive constructivist learning [5].

In this context, we proposed in this work to implement ERL sessions for fifth medical students to assess its contribution to their medical training.

METHODOLOGY

Type of study

This is an analytical cross-sectional study conducted in the psychiatry department at Fattouma Bourguiba Hospital in Monastir during the first trimester of the academic year (from September 26, 2022, to December 16, 2022). We have integrated Ethical Reasoning Learning (ERL) sessions into the hospital psychiatry internship for students.

Study population

Our study focused on Medical Students in Their Fifth Year of Undergraduate Training who did an internship in the Monastir psychiatry department during the first semester of the 2022-2023 academic year. Four groups of students were then included.

Study steps

Preparatory step

The scenario for the ERL session was prepared by two moderators. In the first step, we selected three relevant themes of medical ethics related to the practice of psychiatry:

- Consent and process of hospitalization for mental health reasons
- Respecting patient confidentiality and medical secret
- Mental illness stigma

A clinical vignette was developed based on a real-life case covering the various predetermined themes (Appendix 1, on line). This French vignette was corrected and validated during a team meeting held at the psychiatry department of Monastir on 21/09/2022.

Session proceedings (Appendix 2, on line)

Four sessions of Ethical Reasoning Learning (ERL) were conducted. Each session lasted 45 minutes. Each group was made up of 14-15 students. A U-shaped seating arrangement was used.

To avoid Instructional bias, only one teacher (tutor) conducted all ERL sessions for all students included in the study.

The session was organized as follows:

- Introduction: focused on the need to use ethical reasoning learning from clinical cases before facing real practical situations (2 minutes).
- Reading of the clinical vignette (5 minutes).
- Brainstorming about the problems posed by this clinical situation (5 minutes).
- Classification of problems: social, medical, and ethical issues (5 minutes).
- Identification of medical ethics principles based on the problems posed by the clinical situation: autonomy, beneficence, non-maleficence, equity/justice (10 minutes).
- Construction of the ethical matrix which consists of a grid divided into columns and rows. The columns were dedicated to different ethical principles. The rows contained the proposed solutions and alternatives for the given situation (15 minutes).
- Conclusion (3 minutes).

During each session, students were given time for reflection and discussion to identify underlying dilemmas and propose reasonable solutions that respected the different ethical principles. From this clinical situation, those discussions explored other potential clinical contexts. The tutor, in this case, played a facilitator role in acquiring the different targeted ethical competencies, while avoiding being the main source of information and dialogue: their task was to properly structure the session according to prepared steps and help, if needed, to students through hints.

Evaluation of the pedagogical method

Preparatory phase

To evaluate the contribution of the learning tool, we chose to compare the scores of a pre-session evaluation with those of a post-session evaluation of the same evaluation tool, which was an Objective Structured Clinical Examination (OSCE).

The OSCE was prepared by two moderators and then corrected and validated during a team meeting. This objective and structured clinical examination focused on one of the medical ethics themes targeted by Ethical Reasoning Learning: respect for medical confidentiality. This assessment tool was in the form of a simulated interview. The structure and scoring of the OSCE are detailed in appendix 3 (on line).

- Pre-ERL Evaluation

Before starting the ethical reasoning learning sessions, the objective and structured clinical examination was conducted individually in a quiet office. At the beginning of the OSCE, the non-punitive nature and the learning purpose were explained to the students.

- Post-ERL Evaluation

The same objective and structured clinical examination were repeated immediately after the ERL session to avoid contamination bias.

Statistical analysis

The data were entered and analyzed using SPSS software version 25. The statistical analysis was conducted from a descriptive and analytical perspective. We calculated means and standard deviations for quantitative variables. We checked the normality of these variables using the Kolmogorov-Smirnov test. For qualitative variables, we calculated frequencies. For the analytical study, we performed a percentage comparison using the McNemar

test and a mean comparison using the Wilcoxon test for paired samples. The significance level was set at 0.05.

Legal and ethical considerations

We explained the aim of the present study to the students and obtained their oral consent to participate. We have no conflicts of interest to declare.

RESULTS

Study population

We included 57 students divided into 4 groups. Thirty-nine students were female (68.4%). The mean age was 23 years with a standard deviation of 0.9 (Table 1).

Table 1. distribution of students by gender and internship group

| Group | N | Male | Female |
|---------|----|------|--------|
| Group 1 | 14 | 5 | 9 |
| Group 2 | 15 | 3 | 12 |
| Group 3 | 14 | 3 | 11 |
| Group 4 | 14 | 7 | 7 |

Conduct of ARE sessions

The four sessions were interactive. After the presentation of the clinical vignette, the learners were able to highlight the different problems posed (Table 2).

Table 2. Ethical matrix formulated by the students in the different groups

| | Autonomy | Beneficence | Non-Maleficence | Justice |
|---------|--|--|---|--|
| Group 1 | Doctor-patient Assess the patient's capacity for autonomy | Treat the patient | No detailed medical certificate (except directly for the patient) | No stigmatization of his illness by the medical/paramedical staff |
| | Doctor-patient's family Information | be empathetic | | Regarding the baby's custody |
| Group 2 | Doctor-patient interview the patient alone after the family interview Check the possibility of a free-will hospitalization | Hospitalization Adequate treatment Education regarding the need for continuity of care | Respect confidentiality and medical secrecy | Do not stigmatize the psychiatric disorder |
| | Doctor-patient's family Hospitalization on third-party request | Respect for the husband's reaction | | |
| Group 3 | Doctor-patient Interview with the patient alone (even initially) | Hospitalization: protection of the patient (from suicide) | No disclosure of medical secrecy | treat Mrs. A with standardized care (emergencies, etc.) No stigma of her disorder |
| | Doctor-patient's family Information about his state of health and potential treatment | Non-detailed certificate to justify his absenteeism from work | | No stigma of her disorder |
| Group 4 | Doctor-patient Interview with the patient alone suggest a free-will hospitalization | Protect the patient from the risk of suicide Treatment for acute and long term | No disclosure of medical secrecy | treat Mrs. A with standardized care |
| | Doctor-patient's family Agreement for Hospitalization on third party request | Protect the baby+++ | | Regarding the baby's custody |

Evaluation of the teaching method

The average score of the pre-ERL OSCE was 4.22/10 (range from 1 to 8). The average score of the post-ERL OSCE was 7.14/10 (range from 3 to 9) (Table 3).

During the pre-ERL OSCE, 42.10% of students respected medical confidentiality (n=24). During the post-ERL OSCE, 51 students did not disclose medical confidentiality (89.47%) (Figure 1).

Table 3. Average score of the assessment by OSCE*

| Group | Average pre-ERL OSCE score | Average post-ERL OSCE score |
|---------|----------------------------|-----------------------------|
| Group 1 | 61 | 106 |
| Group 2 | 72 | 99 |
| Group 3 | 54 | 98 |
| Group 4 | 54 | 104 |
| Total | 241 | 407 |
| Mean | 4,22 | 7,14 |

* OSCE= Objective Structured Clinical Examination

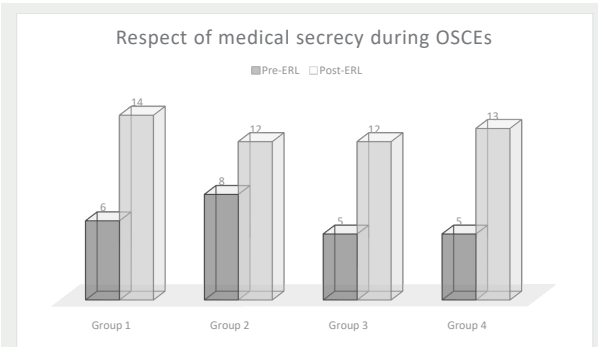


Figure 1. Number of students who respected medical secrecy during OSCEs by group

Comparison between OSCE pre and post-ERL

The average scores of OSCE had non-normal distributions. Therefore, we used the Wilcoxon test for paired samples. There was a significant difference in the mean scores of OSCE before and after ERL, indicating a significant effect of this learning tool on the overall evaluation by OSCE ($p < 0.01$).

Out of the 51 students who respected medical confidentiality during the post-ERL OSCE, 29 had disclosed the patient's diagnosis during the initial OSCE (Table 4). The analytical study using the McNemar test showed a significant difference in the probability of respecting medical confidentiality before and after the ethical reasoning learning session ($p < 0.001$). Therefore, the addition of ERL influenced the non-disclosure of medical confidentiality during OSCE.

Table 4. Distribution of the number of students according to the respect or not of medical secrecy during the OSCEs*

| | | Post ERL OSCE | |
|--------------|---------------------------|--------------------------|---------------------------|
| | | Medical secret disclosed | Medical secrecy respected |
| Pre-ERL OSCE | Medical secret disclosed | 4 | 29 |
| | Medical secrecy respected | 2 | 22 |

* OSCE= Objective Structured Clinical Examination

DISCUSSION

Discussion of main results

In this study, we evaluated the immediate effectiveness of an ethical reasoning training on three themes (consent and hospitalization procedures/respect for medical confidentiality/discrimination of mental illnesses). The

evaluation of this tool focused on the evolution of the student's overall scores and their compliance or non-compliance with medical confidentiality during the previous and post-training ERL sessions. We found a significant difference in the average scores of an OSCE before and after ERL, indicating a significant effect of this learning tool on the overall evaluation by this assessment ($p < 0.01$). We also observed a significant difference between the probability of respecting medical confidentiality before and after the ethics reasoning learning session ($p < 0.001$), with an effect of the addition of this ERL session on the non-disclosure of medical confidentiality during this OSCE.

The effect of this type of learning has been reported by Tsai et al., who concluded that a model of ethical reasoning strengthens the interactions between three domains: medical and ethical knowledge, cognitive reasoning patterns, and attitude [6]. Yazigi et al. also found that the learning method allows for the resolution of relevant ethical problems and facilitates the identification, analysis, and resolution of ethical issues, as well as communication among individuals involved in a different target population, which is postgraduate students (residents in anesthesia and intensive care) [5]. The long-term impact of ERL sessions has been described by Ames et al. [7]. In our study, this remote effect has not been evaluated. We opted to evaluate the immediate effect because students will have access to other sources of medical ethics (example: internship in the forensic medicine department) which may interfere with the long-term evaluation of the impact of our study.

In the literature, multiple methods and teaching tools for ethics were used, depending on the level of learners, the requested content, and the desired objectives. For the theoretical part, it can be transmitted through formal lectures, for example. The organization of this teaching varies greatly from one medical school to another [1]. Within the Faculty of Medicine in Monastir, a total of 28 hours is dedicated to teaching ethics in the form of formal lectures. To acquire and strengthen their theoretical knowledge, students can be referred to other sources [3]. Practical knowledge needs more active and interactive methods in real-life situations. Here, we can rely on clinical internships during which students can be faced with making an ethical decision while being guided and supervised by tutors [8,9]. We can also use less immersive methods stimulating a problem-solving approach based on the analysis of a clinical situation.

Thus, we can mention the sessions of PBL (problem-based learning) and ERL (ethical reasoning learning) [3,10], RPGs (role-playing games) [11], and even more modern methods such as workshops with virtual patients [12,13]. Furthermore, we did not find any comparative studies between ERL and other methods of teaching medical ethics.

Pedagogy and ethics in medicine

The training of doctors is based on the goal of quality [14]. It involves a pedagogical approach focused on objectives and skills that the doctor should have to "treat" patients.

This pedagogical approach is represented by tools and methods of learning and evaluation that aim to optimize action and decision proposals and promote a respectful attitude toward all stakeholders involved in this medical decision [15].

Ethics thus takes a fundamental place in this medical curriculum. It is defined as "the systematic study of the moral dimension (including moral vision, decisions, conduct, and policies) of the life and health sciences, using various ethical methods in a multidisciplinary approach..." [3]. Future doctors must be introduced to medical ethics issues during their training [10]. This "initiation" proves to be much more complex than previously thought. It must include elements of knowledge, skills, and attitudes that do not all exist at the same level of understanding. In addition to that, the teaching of ethics in medicine must be "individualized, autonomous, and global" because, with the constant progress of medicine and the evolution of society, the concept of ethics has become an essential parameter in the physician's daily decisions [11].

Regarding evaluation, it is acknowledged that it has a significant impact on learning itself. Several assessment methods have been proposed, such as multiple-choice questions, essay questions, OSCE, and the script concordance test [16-18]. In our study, we chose to evaluate the effect of ERL on students' attitudes toward an ethical problem through an objective and structured clinical examination. This choice allowed us to explore the know-how of future doctors in a different clinical context, especially regarding respect for medical confidentiality.

Study limitations

This study is limited by certain biases. Firstly, the small sample size (n=57) reduces the statistical value of the results. Secondly, the absence of a comparative group does not allow for formal confirmation of the interest in ERL sessions compared to other educational tools. Lastly, the ERL sessions were based on a single teacher, responsible for student validation. The integration of such a learning practice at the university level, with a larger number of students and the participation and involvement of other tutors, appears necessary.

CONCLUSION

The practice of medicine has become a complex art in which the practitioner must keep abreast of scientific, technological, economic, legal and even moral developments in addition to his mission of care. Medical education must take this into account and prepare future practitioners for the interaction between doctor, patient and society.

In this study we have shown that learning ethical reasoning as an active method of teaching medical ethics gives satisfactory results.

In order to better assess the impact of simulated situations on professional behaviour, it would be interesting to conduct further research. This could include multiple ERL sessions, for example.

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