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Introducing professionalism and medical ethics in undergraduate integrative medical curriculum through a four-dimensional model

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Abstract:

BACKGROUND: To develop a method for designing the ethics and professionalism compatible with the integrative medical curriculum. So that the insertion of ethics and professionalism should start from the initial stages of the integrative program in an indirect manner through student-centered activities, passing through introducing some ethical topics that are appropriate for each module, developing a condensed module at the beginning of the clinical stage, and ended by developing a practical course in the internship period. In this way, a four-dimensional model to present ethics and professionalism has been introduced.

MATERIALS AND METHODS: A questionnaire was conducted for students (230 students) and faculty (65 faculty members) to find out the current situation of ethics and professionalism and the extent of their aspiration and passion for developing it.

RESULT: The result revealed low student and faculty satisfaction with the ethics presentation in the current situation. Educational objectives and outcomes have been developed, and the appropriate teaching model was selected, selecting the main topics, and mapped through a four-dimensional model and assigning the appropriate assessment tools and evaluation mechanisms.

CONCLUSION: This model ensures that the student learns ethics and professionalism and breathes its rules from the beginning of his academic studies. In this way, the student will be able to practice those rules in an automatic and spontaneous manner without having any difficulty in practicing them. In addition, this model helps in breaking down the barriers between faculty members, the basic and clinical sciences, and medical departments which are one of the most important goals of integrative medical education.

Keywords:

Ethics, integrated curriculum, internship, medical program, professionalism, undergraduate

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Introduction

Ethics is the core of the right practice or conduct in a profession. Ethics stem from inner instinct and are regulated by the consciences and souls of human beings.^[1] The code of ethics or conduct in health professionals decreed by most medical associations is aimed at guarding the benefit of the profession by raising the benefit of the patients it serves. Ethical education and

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training should be conducted early and sustained throughout all levels and phases of the medical program.^[1] Learning ethics is not perceived alone for creating ethical doctors. This is argued to be the presence of a hidden curriculum in the medical environment, which supplies gradual ethical acquisition of skills through practice.^[1] Learning and teaching medical students the philosophy and skills of medical ethics and putting them into practice is of great importance in the enhancement of healthcare environments.^[2]

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With an appreciation for the scale of medical learning, there is concern about expanding the focus on milestones and competencies of ethics beyond graduate medical education. Some educators intimate integrating them early into the early phase of the curriculum of undergraduate medical education by addressing them as part of continuous medical education and continuation of certification.^[3] Some authors reported that learning medical ethics and professionalism improves learner awareness,^[4] knowledge,^[5] attitudes,^[6] confidence,^[7] moral reasoning,^[8] and decision-making^[9] and improves the confidence of patients with their physicians.

Most medical schools in the USA^[10] and European countries^[11] introduced courses in medical ethics by the end of 1990. In Asia, about 89 medical schools out of 100 reported that ethical topics were implemented.^[12]

Three main basic principles of universal ethics were founded: Beneficence/Nonmaleficence, Justice/equality, and autonomy or individual freedom.^[13] In 2004, Jagsi^[14] described the ethical issues in the health profession according to these basic principles: Respect for individuals, beneficence, and distributive justice.

The aim is to design a module on professionalism and ethics in the undergraduate integrated medical curriculum to prepare the students to be good practitioners by identifying the ethical rules, rights, and guidelines related to patients, doctors, patient–doctor relationships, and practice.

Materials and Methods

Study design and settings

A cross-sectional study was done. A valid questionnaire was formed by psychometric professionals and distributed electronically all over the MBBS students of the Al-Azhar faculty of medicine.

Study participants and sampling

The respondents were about 230 MBBS students and 65 faculty that were included in the current study. The students represented all phases and levels of the program. The aim of the questionnaire was to identify the opinion of students and faculties toward introducing professionalism and ethics modules into the medical curriculum and measure the degree of knowledge of different ethical issues. All questions were closed-ended with the 5-point Likert scale instrument.

Data collection tool and technique

The questionnaire was constructed as a Likert scale including five categories [strongly satisfied, satisfied, neutral, dissatisfied, and strongly dissatisfied] and scored from 5 to 1 [Questionnaire]. The obtained data were tested

against reliability before being analyzed statistically by SPSS version 25. Descriptive studies were done.

Ethical consideration

This work was done after obtaining the ethical approval from the ethical committee of Al-Azhar Faculty of Medicine and informed consent for publication was taken from all participants who responded to the questionnaire.

Results

Assessment of the current situation of ethics and professionalism was obtained from the analysis of the questionnaire. Most of the students 185 out of 230 [80.4%] and faculty 47 out of 65 [72.3%] showed dissatisfaction about the presentation and conduction of topics of ethics and professionalism in the curriculum and appreciated the insertion of separate modules for ethics and professionalism in the curriculum. Nearly all students want to be concerned about their duties and responsibilities in the healthcare settings. The results of student and faculty satisfaction are represented in [Table 1].

Discussion

According to the results of a questionnaire to determine the extent of satisfaction of students and faculty members with ethics and professionalism, and since these results necessitated making urgent fundamental changes in ethics and professionalism by those concerned, a committee was formed to study how to make the necessary changes to ethics that are compatible with the integrative approach. For this purpose, several workshops were held to discuss the following: 1) identification of current needs, 2) formulation of goals and objectives, 3) identifying the contents, 4) selecting the model of the module [PRISM, SPICES, and Spiral], 5) selecting the learning and teaching strategies, 6) choosing the appropriate assessment tools [quantitative and qualitative] to emphasize the goodness of fit between what is being measured and the assessment strategies, and 7) evaluation and feedback: development of evaluation strategies to evaluate immediate outcomes to recognize areas of weakness and designation of early improvement plan. The identification of current needs was done through several meetings of the module committee to draw up the goals and objectives of the module and identify the resources. The course description was formulated as shown in [Table 2].

For planning, an ethics curriculum spiral curriculum has been selected by the module committee as it allows communication of all the departments evenly along all phases of a curriculum, with common themes.^[15]

Table 1: Students and faculty satisfactions about the current situation of ethics in the integrated-based curriculum

	No	Strongly satisfied	Satisfied	Neutral	Dissatisfied	Strongly dissatisfied	Mean±SD
Students	230	15	22	8	84	101	2.008±1.21
%		6.5	9.6	3.5	36.5	43.9	
Faculty	65	5	10	3	17	30	2.12±1.35
%		7.7	15.4	4.6	26.1	46.2	

Table 2: Course description of the proposed ethics and professionalism module as a part of the four-dimensional model

Module	Course description
Ethics and Professionalism	The course deal with all fields related to medical ethics including identification of the cultural basis of ethics, doctor’s duties toward self, colleagues, patients (and families), the profession, and the community in general, situations in which truth telling and describe a systematic approach to breaking bad news, patients’ rights and responsibilities, patients’ values and beliefs, medical errors and malpractice, as well as mode of prevention and solving, autonomy, informed consent, guard to protect the patient’s privacy and confidentiality of the patient’s medical information. and the conditions in which the confidential medical information may be shared, capacity for decision making, the roles of substitute/proxy decision makers, the use of advance directives, withholding artificial life support, conditions of withdrawing artificial life support, ethical issues of organ donation, harvesting, and transplantation, the importance of a conflict of interest in the field of medicine, research ethics, important ethical issues related to emergencies, ethic-legal issues involved in assisted reproduction, potential ethical issues in human reproductive cloning, various methods of contraception, pregnancy termination, and in gender selection.

The benefits of this model come from its exhibiting the topics in a sequence from simple to complex. In addition, it breaks down the boundaries and barriers that have developed between modules and departments. Furthermore, implementing an ethics curriculum in all years linking the modules with a spiral integrative curriculum will help the achievement of desired outcomes in the students.

In addition, objectives were outlined and mapped in all phases of the program as a form of the spiral curriculum through a four-dimensional model as follows: 1) Insertion of ethics issues within modules as a part of student-centered activities such as problem-based learning (PBL), case-based learning (CBL), team-based learning (TBL), and hospital-based teaching (HBT) in a vertical and horizontal manner such as insertion of case-based scenarios in other modules with referral to its ethical issues. For example, ethical issues related to research are inserted in research modules (research methodology, research presentation, and research

publication), and ethical issues of assisted reproduction are inserted in reproductive medicine and women’s health. 2) Insertion of ethics topics in the appropriate modules in all phases of the program. 3) Foundation of condensed module for ethics and professionalism mapped in the fourth year, 4) The foundation of practice-based ethics and professionalism course in the internship in which the ethics issues were delivered initially as CBLs then practice these ethics when facing real patients in different healthcare situations. In addition, the CBLs of the internship are more complex than those of basic and clinical years and stress most presented ethical issues. Furthermore, some case-based scenarios that were delivered in basic and clinical phases were reinforced in the internship for discussion to recall the knowledge, identify the new perspectives of students, and find the method of analyzing the background of the real clinical situation. This four-dimensional model for learning ethics and professionalism is represented in [Figure 1]. All learning objectives of the ethics and professionalism module and their distribution in the main module and other most appropriate modules are represented in [Table 3].

In the present model, the insertion of some ethics topics in many modules coincides with that seen in the Johns Hopkins curriculum, which adopted curricular reforms and shifted from traditional teaching to integrated-based learning and offered ethics and professionalism as selected topics inserted in many courses as an alternative of submitting medical ethics and professionalism as a separate course.^[16]

The proposed model in the current work is a more comprehensive and holistic approach to teaching and mastering ethics among medical students as it maps the ethics through all medical programs starting from the early phase. This is controversial with the model proposed by Shelton and Campo-Engelstein^[17] who described a virtue ethics model and its application as a longitudinal integrated curriculum in the fourth-year medical curriculum.

The educational theory recommends that spacing and replication of content advance learning;^[18] therefore, the professionalism and medical ethics module is better mapped in the program as a spiral or longitudinal course. This results in continuous changes in behavior,



Figure 1: Four-dimensional model of ethics and professionalism in the integrated medical curriculum

critical thinking, and reasoning as the early educational interferences are strengthened and advanced by successive exposures. Ethics and professionalism education must endeavor to push apprentices from knowledge and skills acquisition to change in behavior to reflect positively in patient care which is the target. The strategy of learning and teaching medical ethics needs to be more flexible and varied according to institutional resources and learning styles as no single best educational resources were recommended.^[18] In the present work, a variety of teaching tools were used as an integrated lecture, PBL, CBL, TBL, HBT, simulation, and roleplay. These varieties give the tutor more chance to select the best tool that is more suitable for each objective.^[19] In addition, some of these CBL or TBL applied for early phases were reinforced in late clinical years by asking students to analyze the ethical issues in the background and context of new clinical settings. The ideal method for learning ethics in late phases is the practice on real patients, or at least using simulators or roleplay, and using the script alone is not satisfactory. This will help in transforming the students' knowledge into cognitive and professional skills.

Furthermore, educators must encourage students to use the technology in learning ethics such as recorded materials and documented ethics courses^[20] or formal ethics courses.^[21] In addition, the use of social media in studying ethics and professionalism among healthcare professionals has been reviewed and revealed that both benefits and dangers can exist, and caution should be taken on using social media in ethics education.^[22] Other authors found that trigger films are considered an effective educational tool in teaching medical ethics and professionalism at the level of undergraduate medical schools.^[23,24]

Some authors introduced ethics courses specific to some specialties such as radiology,^[25] hand surgery,^[26] perioperative clinical practice,^[27] and community health workers.^[28] Educators should create their online courses as a form of blended learning for their reentered classes and activate the flipped classroom approach where the students can watch lectures online and save class time for discussion and training using simulation or roleplay.^[29]

In this paper, the distribution of ethics topics runs in four directions which are mapped vertically and horizontally all over basic, clinical years as well as internships. In addition, the mechanism of conduction of ethics should be modified according to levels and phases of the curriculum between the students of basic, and final academic years and internship. The ethical issues are presented in the context of PBL and CBL and should have simplicity in basic years, and more complexity in clinical years and internships. In the internship, the ethical issues focus mainly on the ethical problems related to the current situation or third-party workplace. Second, the nature of timetables and intern responsibilities render the educators and supervisors utilize different learning tools suitable to the levels of the program.

To assess the outcomes of ethics and professionalism, first, the allocated objectives must be developed to be specific, measurable, applicable, realistic, and time-bound [SMART]. With the achievement of SMART criteria, a variety of assessment tools can be applied such as objective structured clinical exam [OSCE] or modified OSCE such as practically assessed clinical examination skills [PACES]; in both, students are anticipated to grip the ethical issues proficiently within a specified time.^[29]

In addition to OSCE/PACES, especially in the current four-dimensional model, the integrated assessment tool can be used. This is accomplished by testing ethics principles and professionalism at other exams, as parts of module/course assessment in the question paper, and as a part of clinical assessment. This is effective in completing integration between basic and clinical disciplines or between different disciplines at all phases of the program. The contents of the ethics and professionalism module aligned with teaching strategies and assessment tools are represented in [Table 4].

However, an anticipation of performance-based assessment for ethics and professionalism is inspiring for most medical curricula.^[23] Some reports revealed that some areas of ethics and professionalism are mainly behavioral and not performance related, so it is difficult to measure such things as compassion, altruism, humility, and integrity.^[30,31]

Assignments/reflective logs: Students are asked to do assignments about directed topics. Some assignments are

Table 3: Distribution of learning objectives of the ethics and professionalism along the main module and other most appropriate modules

	Learning objectives	Appropriate module
1	Differentiate between different cultures' approaches to bioethics and appreciate the ethical, religious, legal, and policy importance of knowing about the standards of ethics and professionalism in the healthcare setting and be able to follow them.	Ethics and professionalism
2	Demonstrate the ethical, religious, legal, and policy importance of knowing about the standards of ethics and professionalism in the healthcare setting and being able to follow them.	Ethics and professionalism
3	Define the doctor's duties toward self, colleagues, patients (and families), the profession, and the community in general.	Ethics and professionalism
4	Conduct the ethical issues and situations as truth-telling and describe a systematic approach to breaking bad news using the 6-step protocol for delivering bad news.	Ethics and professionalism
5	Understand patients' rights and responsibilities, patients' values and beliefs as well as the ethical issues related to patients' rights.	Ethics and professionalism
6	Differentiate between medical errors and malpractice, as well as the mode of prevention and solving.	Ethics and professionalism
7	Define the concept of autonomy, informed consent (from an adult, child, mentally impaired, unconscious, in an emergency), its situation and scope, its detailed process (competence and capacity/incompetent using proxy), benefits for both patients and physician, and list its components.	Ethics and professionalism
8	Emphasize the measures that the healthcare team should guard to protect the patient's privacy and confidentiality of the patient's medical information and the conditions in which the confidential medical information may be shared beyond the patient.	Ethics and professionalism
9	Define terminal illness, terminal care, palliative care, and medical futility, capacity for decision-making, the roles of substitute/proxy decision makers, the use of advance directives, and appreciate ethical-legal issues relating to Do Not Resuscitate (DNR) orders.	Critical care
10	Follow through euthanasia and related ethical issues, conditions of withholding artificial life support, conditions of withdrawing artificial life support, ethical issues of organ donation, harvesting, and transplantation in terminal illness, and ethical-legal issues relating to postmortem autopsy.	Critical care
11	Align the importance of a conflict of interest in the field of medicine, the meaning of transparency in the relationship between a health practitioner and pharmaceutical and medical equipment companies and state some important ethical rules in this area.	Critical care
12	Understand modern research ethics: terminology and historical background, the principles, and processes of informed consent for research, patient safety in research and benefit vs. risk considerations, the importance of privacy and confidentiality in research and methods of their assurance, the rights and obligations of the investigator, the sponsor, and the patient, and appreciate the delicate balance between clinical care and clinical research.	Research modules
13	Describe the contents of the research protocol and related documents, issues of research governance: Institutional Review Board/Research Ethics Committee (IRB/REC), Nuremberg, Helsinki, good clinical practice (GCP), and Saudi research regulations, the ethics of research publication and how to prevent violations and the types, and the prevention, of conflict of interest in research and publication.	Research modules
14	Understand the ethical issues in disease prevention versus disease treatment: Serious ethical, political, and economic issues, concepts of equality and equity in healthcare.	Primary healthcare
15	Identify the ethical issues in different situations such as epidemiological research, disease screening, contagious disease control, smoking, and drug addiction control, vaccination, and in disasters.	Family and community, primary healthcare, healthcare management, child health, and toxicology
16	Explain the ethical-legal issues involved in assisted reproduction, potential ethical issues in human reproductive cloning, various methods of contraception, pregnancy termination, in gender selection and evaluate the ethical-legal issues in gender change/gender correction operations (gender reassignment surgery), and the ethical issues in menopausal fertility and hormonal replacement and the issues of oncofertility.	Reproductive, women health, forensic, and toxicology
17	Define organ transplantation, the significance of organ transplantation and the Islamic perspective on this issue, ethical issues related to global organ transplantation and guidelines, possible practical solutions, and conclusions of organ transplantation and organ trafficking.	Selective subspecialties
18	Identify the ethical issues related to resource allocation in public health, present at least one ethical framework for resource allocation, and utilize an ethical framework to outline an approach to allocate resources.	Healthcare management
19	Understand the concepts of good health, illness, family health, community health, public health, preventive medicine, and health promotion and identify the ethical issues in disease prevention versus disease treatment: Serious ethical, political, and economic issues.	Primary healthcare
20	Discuss the concepts of equality and equity in health care, prioritize the ethical issues in priority setting in healthcare resource allocation, perform the Ethical issues in epidemiological research, disease screening,	Healthcare management

Contd...

Table 3: Contd...

	Learning objectives	Appropriate module
	contagious disease control, ethics of smoking and drug addiction control, ethical issues in vaccination, and ethical issues in disasters.	
21	Outline the basis of emergency ethics, ethical issues related to emergencies, how often ethical issues happen in the Emergency Department, the ethical issues in the emergency department, and how ethical dilemmas should be disclosed and solved in the emergency department.	Emergency medicine
22	Identify different approaches to analyze, and resolve ethical issues encountered in clinical practice.	Ethics and professionalism
23	Align the importance of a conflict of interest in the field of medicine, and the transparency between a health practitioner, pharmaceutical, and medical equipment companies and state some important ethical rules in this area.	Healthcare management

Table 4: Contents of ethics and professionalism module, contact hours, teaching strategies, and assessment tools

	Topics	Contact hours	Teaching strategy	Assessment tool
1	Introduction to ethics, bioethics, and professionalism	2	Lecture	MCQs
2	Principle of beneficence and maleficence	2		MCQs
3	Doctor–Patient relationship	2	HBT	Checklist/observation, rating scale
4	Truth-telling and breaking bad news	2	Simulation, roleplay, CBL	Discussion, OSCE
5	Doctors’ professional relationships and duties	2	Lecture	MCQs
6	Patients’ rights and responsibilities	2	Lecture. HBT	OSCE,
7	Medical malpractice and medical errors	1	CBL, Lecture	MCQs
8	Patient autonomy and consent to treatment	1	HBT, CBL	OSCE
9	Privacy and confidentiality	1	HBT	MCQs, OSCE

based on applied activities on real patients and carried out in the wards. Students are also asked to transcribe philosophical conclusions of precise activities allotted to them, stressing learning acquisition that happened during the activity, and areas needed to do improvement action plan, regarding knowledge, skills, and attitudes. These assignments are time-bound.

Assessment via audio-visual material: Ask the students to practice the ethical issue of simulating real patients and record these activities audio-visual which is further critically analyzed by faculty and give the students’ feedback.

Peer and team observation: During real-world activities, students are provided with guidance on how to formulate beneficial feedback [including area of strength, areas of weakness, and areas for improvement] to their peers about their performance, particularly in professional skills.

Other assessment tools can be used such as observations of students, behavior in student-learning activities [TBL, PBL, CBL, seminars], 360-degree evaluation from patients and related families, faculty, peers, nurses, technicians, staff, families in the patient care context,^[32-37] mini-CEX, portfolio, rating scale and checklist, performance evaluation in the real clinical setting, third-party evaluation, and workplace-based assessment.^[38]

In addition, some aspects of ethics and professionalism are a part of the hidden curriculum, and it is usually

missed in evaluation as most evaluators focus mainly on applied courses and modules.^[8,39] To solve this problem, evaluators and program directors should evaluate the whole learning environment and make reforms and rules to protect the learners against any deterioration of professional behaviors.^[40] Other authors stressed the importance of establishing ethics among healthcare workers and applying a definite outline for professionalism, professional identity, and professional socialization.^[41,42]

Combined quantitative and qualitative assessment tools are advised in assessing ethics and professionalism. Quantitative ratings should not be the single tool in the evaluation of excellence in ethics and professionalism and should be balanced by qualitative assessment tools. This combined advance will enrich evaluations and make them more realistic. In addition, evaluators must be trained in perceptual, observational, and analytical capabilities and how to elaborate pros and cons of performing these assessments.

Some reports encourage learning ethics and professionalism as condensed courses are not integrated into other modules either vertically or horizontally owing to the insertion of ethics topics into modules making these topics invisible and their outcomes may not be achieved. In addition, these topics will be addressed weakly in assessments that make students omit or neglect them.^[43,44]

A very important factor in learning ethics comes from faculty. The faculty must have proper training in teaching

ethics and professionalism and optimize their behavior to be role models for the learners in all aspects of ethics since someone who lacks something will not give it. In addition to sharing their own experience with them, faculty assessors must be skilled at observing, listening, and reading the learners to genuinely understand, absorb, and see them.^[45]

Limitations of the study

The proposed ethics and professionalism model is a suggestive model and needs to be fully implemented in its four-dimensional domain. Now it is partially implemented, and hence, there is a shortage of feedback from peers and students as its implementation is not fully completed.

Conclusion

Students learning the basic rules of ethics early contribute to creating a generation of doctors who are distinguished by a high degree of professionalism, as they practice these rules and skills in an automatic manner. This is achieved through teaching ethics in the initial stages of the program, passing through all stages of the program in an ascending manner. This is attained by presenting a four-dimensional model so that the student gets to know the basics of ethics through student-centered activities such as problem-solving sessions. The second dimension is represented by the introduction of some ethics topics in appropriate modules. The third dimension is represented by the introduction of a condensed module for ethics in the early clinical stage. The fourth dimension is in the internship stage, by introducing a practical, applied program for the subject of ethics that relies mainly on dealing with real patients and the surrounding environment. This model ensures that the graduating student has mastered all ethical and professional rules, will be able to deal with all environments, and can face any future challenges.

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Data availability statement

All data are available in the article and any further explanation and data can be obtained directly from the author.

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Conflicts of interest

There are no conflicts of interest.

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The questionnaire used in the study of the current situation of ethics and professionalism illustrates the opinion of faculty and students towards the current situation and the need for changes.

Item	Strongly satisfied	Satisfied	Neutral	Dissatisfied	Strongly dissatisfied
1. I know the importance of learning ethics and professionalism in a medical context.					
2. Learning ethics supports my self-confidence in dealing with patients, colleagues, and other healthcare workers.					
3. The current ethics topics are enough to teach basic ethics skills.					
4. In the current position, ethics and professionalism are quite addressed in the curriculum.					
5. The contact hours specified for teaching ethics in the modules are enough.					
6. I think that the teaching and learning modalities used for learning ethics are well-matched with the selected topics.					
7. The dispersed ethics topics along the modules and courses are well-matched					
8. The ethics topics and contents allocated within the modules should be modified.					
9. I think that mapping ethics topics along courses is enough to learn ethics.					
10. The mode of assessment of ethics is quite well in the current situation.					
11. The mode of assessment of ethics should depend on observations rather than the written assessment paper.					
12. Practicing ethics and professionalism for undergraduates should be started in the early phases of the program.					
13. I think that ethics and professionalism need to be conducted at all phases of the program.					
14. I think that topics of ethics must be more varied to cover all ethics related to patient-doctor relationships.					
15. The learning climate should be optimal in dealing with ethical principles.					
16. The introduction of innovative methods of learning ethics should be done to make learning ethics more enjoyable.					
17. The students should learn ethics as a part of a hidden curriculum rather than through conducted courses.					
18. Practicing ethics among students should be increased in the late phases of the program					
19. Practicing ethics among trainees in clinical training should be more stressed by the clinical supervisors and immediate feedback should be given.					
20. Faculty members and clinical supervisors must practice ethics and professionalism to a high degree in order to be role models for students.					