






# Health Ethics Education: Knowledge, Attitudes, and Practices of Health Care Ethics among Undergraduates and Recent Graduates of the Faculty of Dentistry, Sana'a University, Yemen.

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## Abstract

**Background:** From the dental curricula, dental health care professionals are trained in ethics as an important part in many countries of the world but in Yemen it is not usually taught as a full subject. Therefore, traditional training methods do not prepare dentists well enough to face the ethical dilemmas that are routinely encountered. The awareness and sound ethical attitudes of the dentist are of paramount importance to improve dental care service and patient satisfaction and maintain the professional environment of any educational or service institution.

**Objective:** The current study aimed to analyze the ethical awareness, practices, and perceptions about the ethical climate of the Faculty of Dentistry, Sana'a University, among undergraduates and new graduates dentistry.

**Methods:** This cross-sectional study based on a previously prepared questionnaire was conducted on a total of 364 students from the fourth and fifth year (the last year) and recent dental graduates who are applying in the clinics of the Faculty of Dentistry, University of Sana'a, Yemen. The questionnaire contained 17 subjective items consisting only of closed questions about awareness, moral practices and perceptions, and about moral climate. The completed questionnaires were then analyzed where descriptive analysis was performed for all the data collected.

**Results:** 364 questionnaires out of 397 were returned for analysis and this made the response rate in this study 91.7%. The study population was predominantly female (n = 207) (56.9%). The results of this study revealed that there is a severe lack of knowledge of dental ethics among the dental students of Sana'a University, and that more incentives are needed to improve the situation. On the other hand, the attitudes of the study participants were found to be positive, indicating the general goodwill and loyalty of the students to their profession which is an important finding and can be used as a basis for concluding that any changes made will be faithfully followed by the students. Furthermore, there has been a good approach observed with regard to practices related to the ethics of dental care.

**Conclusion:** There is an urgent need for further expansion with regard to the teaching of dental ethics in the Faculty of Dentistry, Sana'a University, and one of the encouraging results of this expansion and interest is that students have shown a good attitude towards their profession and ethical dentistry.

**Keywords:** dental ethics; dental students; Sana'a university; Yemen

## Introduction

Medical ethics is a practical part of ethics that evaluate the practice of clinical medicine and associated scientific research. Medical ethics is established on a collection of values that professionals can be present at the event of any confusion or conflict. These values include respect for non-offense (non-maleficence), independence (autonomy), benevolence (beneficence), and justice [1]. These principles allow clinicians, caregivers, and families to develop a treatment plan and work toward the same common goal [2]. It should be noted that these four values are not in order of importance or relevance and that they all include values related to medical ethics [3]. Nevertheless, a conflict may arise that leads to the need for hierarchy in the moral system, such that some moral elements overwhelm others for the purpose of applying the best moral judgment to a complicated medical situation [4]. Medical ethics are mainly important in decisions concerning involuntary treatment and involuntary compliance [4]. Medical ethics include autonomy, beneficence, and justice the same as they relate to conflicts for instance patient confidentiality, euthanasia, informed consent, and conflict of interest in health care [5-8]. Additionally, medical ethics and culture are related to each other as different cultures apply ethical values differently, sometimes placing more emphasis on family values and decreasing the importance of autonomy. This leads to a growing need for culturally sensitive clinicians and ethical committees in hospitals and other healthcare settings [9-11].

Dental ethics can be described as the ethical responsibilities of a dentist towards his patients, colleagues and the community. Advances in the field of oral health care have led to the emergence of new ethical dilemmas that have fueled problems and therefore require specialists to deal with them with knowledge and professionalism [12, 13]. Behind the debate over the effectiveness of dental ethical education, there has been some vagueness regarding the topics being educated [14]. Topics for instance informed consent are agreed upon and taught in dental schools, but there are others as measures to be taken when eyewitness misbehavior by a senior dentist with patients and staff, identification of practice-related offenses by any staff and institutes protocol to be alerted when an employee engages in unprofessional behavior. Otherwise, professional behavior with staff, patients, and colleagues, the importance of documenting work to patients, and patient confidentiality are not taught as part of the course and are teacher/school or hospital dependent [14, 15]. Needless to say, when educated and informed about the consequences of protocols and ethical limits, dentists are better prepared to deal with the dilemmas of routine practice and unusual situations.

Although there are all the rules and regulations regarding the professional conduct of dentistry in the world in general, there are still increasing reports of ethical misconduct of dental students and dentists with patients and their fellow colleagues [14-17]. As for this problem in Yemen, it has not been studied at all. When researching and investigating research related to dentistry in Yemen, we found that it was research that dealt with the characterization and sensitivity of antibiotics to bacterial dental infections such as *Aggregatibacter actinomycetemcomitans*, *S. aureus*, *S. mutans*, the incidence of *Candida albicans* in denture wearers; and association of biofilm formation in dental caries, antibiotic resistance and malocclusions [18-31]. However, there is not even a single study to assess medical and dental ethics in Yemen.

The Yemeni Medical Council has its own code of medical and dental ethics, but it is not in circulation and it is difficult to obtain it, although the dilemmas faced by Yemeni institutions is the lack of regulatory authorities and weak public awareness, which exacerbate the misconduct and malpractice of dentists in Yemen. Therefore, the current study aimed to analyze the ethical awareness, practices, and perceptions about the ethical climate of the Faculty of Dentistry, Sana'a University, among undergraduates and new graduates dentistry.

## Materials and Methods

This cross-sectional study based on a previously prepared questionnaire was conducted on a total of 364 students from the fourth and fifth year (the last year) and recent dental graduates who are applying in the clinics of the Faculty of Dentistry, University of Sana'a, Yemen. The questionnaire contained 17 subjective items consisting only of closed questions about awareness, moral practices and perceptions, and about moral climate. The completed questionnaires were then analyzed where descriptive analysis was performed for all the data collected. Consent was taken from all students participated on the study. 364 questionnaires out of 397 were returned for analysis and this made the response rate in this study 91.7%. The questionnaire itself comprised of 17 self-administered closed ended multiple choice questions which took almost 5 minutes to answer (time determined by pre testing). The mean age of the sample was 23 years as the age range was found to be from 21 -26 years.

## Results

364 out of 397 questionnaires were returned for analysis, making the response rate in this study 91.7%. Male, female, and levels percentages were presented in Table 1. The dominant population was female (56.9%) while the number of male participants = 157 (43.1%). The number of fourth-year students was 123 (33.8%), fifth-year students 123 (33.8%), and recent graduates were 118 (32.4%). The results of this study showed that there is an acute lack of knowledge of dental ethics among dental students at Sana'a University, and that more incentives are needed to improve the situation. On the other hand, the attitudes of the study participants were found to be positive, indicating general goodwill and students' loyalty to their profession, which is an important finding and can be used as a basis for concluding that any changes made will be beneficial to the students. Furthermore, a good approach has been observed with regard to practices related to the ethics of dental care. Regarding knowledge, only 51%, 49% and 52% of undergraduates and graduate students were familiar with the term "dental ethics". Only 15%, 13% and 20% of the fourth, fifth, and recent graduate students, respectively, were familiar with the Yemen Medical Council's code of ethics and 15%, 11% and 12% were familiar with the international code of ethics. An alarming number of candidates (52% and 55% of fourth and fifth year students, respectively) were not familiar with the Hippocratic oath. An alarming number of candidates 95%, 94% and 93% of fourth and fifth year and recent graduates respectively were not familiar with faculty ethics policies. When asked about penalties for notorious behavior, it was found that only 21%, 22% and 24% of fourth and fifth year students and recent graduates, respectively, were not familiar with the penalties for this behavior. When asked about ethical principles such as benevolence and honesty 45%, 41% and 49% of fourth and fifth year and recent graduates respectively, were found to be familiar with ethical principles such as benevolence and honesty. Almost the majority (65% to 72%) of candidates were aware of informed consent in dental practices, which was not surprising (Table 2). Table 3 shows the attitude of fourth- and fifth-year students and recent graduates of dental students to ethics. Regarding the attitude, 55% to 85% answered "yes to refer patients to another facility," 77%-90% answered "yes, the dentist has the responsibility to inform patients of infectious diseases." 52-70% of the candidates also answered 'yes' to discussing the ethical issue with the clinical supervisor. Table 4 shows the practices of the Faculty of Dentistry, Fourth and fifth and recent dental graduates on ethics. In terms of practices, 55% to 85% of students practice honesty, compassion, kindness, fairness, and integrity. From 77% to 90% of participating students practice informed consent. Between 52% and 72% of students concerned about patient privacy and confidentiality. A 50% to 64% of the participants had thorough and clear work documentation for all patients, but the rest did not, which is unfortunately still a huge number.

Variables		4 <sup>th</sup> years	5 <sup>th</sup> years	Recent graduates	Total
Gender Total	Male	53(43.1%)	53(43.1%)	51(43.2%)	157 (43.1%)
	Female	70 (56.9%)	70 (56.9%)	67 (56.8%)	207 (56.9%)
	Total	123 (33.8%)	123 (33.8%)	118 (32.4%)	364 (100%)

**Table 1:** The distribution of participants according to levels and gender

Variables Do you know?	Answer %	4 <sup>th</sup> years	5 <sup>th</sup> years	Recent graduates
Meaning of ethics	Yes	51	49	52
	No	49	51	48
Yemen Medical council code of ethics	Yes	15	13	20
	No	85	87	80
International code of ethics	Yes	15	11	12
	No	85	89	88
Hippocrates oath	Yes	48	45	79
	No	52	55	21
Our faculty ethics policies	Yes	5	6	7
	No	95	94	93
Penalties regarding infamous conduct	Yes	21	22	24
	No	79	78	76
Moral principles such as veracity beneficence	Yes	45	41	49
	No	55	59	51
Informal consent	Yes	35	29	28
	No	65	71	72

**Table 2:** knowledge of the faculty of dentistry, Sana'a University 4th, 5th and recent dental Graduates students on ethics

Variables Do you?	Answer %	4 <sup>th</sup> years	5 <sup>th</sup> years	Recent graduates
Refer patients to another facility	Yes	85	64	55
	No	15	36	45
Dentist has responsibility to inform patients about communicable diseases	Yes	90	88	77
	No	10	12	23
Discuss encountered ethic problem with clinical supervisor	Yes	70	72	52
	No	30	28	48

**Table 3:** Attitude of the faculty of dentistry, Sana'a University 4th, 5th and recent dental Graduates students on ethics

Variables Do you?	Answer %	4 <sup>th</sup> years	5 <sup>th</sup> years	Recent graduates
Practice honestly, compassion, kindness, integrity and fairness	Yes	85	64	55
	No	15	36	45
Practice informative consent before every procedure	Yes	90	88	77
	No	10	12	23
Take care of patient's privacy and confidentially	Yes	70	72	52
	No	30	28	48
Have thorough and clear work documentation for all your patients	Yes	60	64	50
	No	40	36	50

**Table 4:** Practices of the faculty of dentistry, Sana'a University 4th, 5th and recent dental Graduates students on ethics

Variables	Answer	%
Is Faculty people look out for each other good?	Strong agree	19
	Agree	24
	Undecided	29
	Disagree	13
	Strongly disagree	15
Is law or ethics code of profession major consideration in our faculty?	Strong agree	17
	Agree	34
	Undecided	22
	Disagree	16
	Strongly disagree	11

**Table 5:** Climate about the faculty of dentistry and their dental clinics

## Discussion

There have not been many researchers conducted on ethics in the field of Dentistry in Yemen. This is probably the first research conducted among dentists and dental students only. According to results of this study, there is a clear difference between knowledge and attitudes regarding ethics. There is a general lack of knowledge as compared to attitudes which are more positive. This has been proven by other studies in the past too. In a study conducted in Pakistan by Siddiqui *et al.* (2020) [17] and India by Janakiram and Gardens (2014) [13], they were surveyed those dental graduates overall had less knowledge and did not consider learning of bio ethics as important as the medical graduates in the study did [13]. Other than that, study participants had obtained their knowledge from elsewhere, like their postgraduate training and did not undergo formal ethical education [13, 17]. Another study at surgical wards in Pakistan by Shiraz B, concluded that the application of ethical knowledge is extremely poor in surgical wards and that doctors need more training regarding health care ethics and its implementation

[16], it was also concluded that only 11 out of 101 candidates reported ethics being taught as students.

Regarding ethical climate of the institution, a study by Shashidhar Acharya also demonstrated mixed reviews and concluded that senior members perceived ethical environment satisfactory as compared to junior members. A different trend is observed in this study as population comprised of fresh graduates and Undergraduates, mixed reviews regarding institutional environment has been observed [32].

In the current study, between 52% and 72% of students are concerned about patient privacy and confidentiality. Confidentiality is usually applied to conversations between physicians and patients, and this concept is generally known as patient-physician privilege. Legal protections prevent doctors from disclosing their discussions with patients, even under oath in court. For example, in the United States, confidentiality is mandated under the Health Insurance Transfer and Accountability Act of 1996 known as HIPAA, [33]. However, there are no clear rules in Yemen that are applied in secrecy to conversations between doctors and patients in general or in the field of dentistry.

In the current study, between 52% of students are concerned about patient privacy. Medical researchers, with increasing frequency globally and in Yemen, are conducting research on activities in online environments such as discussion boards and bulletin boards, and some clinicians may display patient information and photos online and not apply informed consent and privacy requirements, although there are some guidelines [34]. This could have serious repercussions on the confidentiality of the patient's identity. It is universally known that the websites of health care institutions are responsible that the private medical records of their online visitors are safe so that they are not marketed and exploited in the hands of pharmaceutical companies, profession registries, and insurance companies [35, 36].

Approximately the majority (65% to 72%) of candidates were aware of informed consent in dental practices (Table 2). Informed consent infers to a patient's right to take delivery of information relevant to a recommended treatment, so that he or she can make a voluntary, well-informed decision about his or her care [37]. To give informed consent, the patient must be qualified to make a decision about his treatment and be provided with relevant information regarding the treatment recommendation, including its nature and purpose, and the potential burdens, risks and benefits of all options and alternatives [38]. After receiving and understanding this information, the patient can then make an informed decision to either consent or refuse treatment [39]. In particular situations, there can be an exclusion for informed consent, especially in Yemen, for example, but not limited to, in cases of medical emergency or patient incompetence, as many patients upon request doubt the ability of the doctor, which leads to their lack of access to care health [40]. The ethical concept of informed consent also requests in the clinical research situation; each and every one human contributors in the research should voluntarily make a decision to contribute in the study after they are fully aware of all relevant aspects of the research experience needed to decide whether or not to participate [41]. Informed consent is a moral and

legal duty; whereas, if appropriate consent is not obtained prior to conducting, treating or participating in research, service providers may be held legally responsible for battery and/or other damages [42]. An alarming number of candidates 95%, 94% and 93% of fourth- and fifth-year graduates and recent graduates respectively are not familiar with faculty ethics policies. Therefore, this committee must be activated in the faculty where often, simple communication is not enough to resolve the dispute, and the college ethics committee must meet to decide on a complex issue. These bodies consist principally of professors specializing in dental health care, but may also include philosophers, laymen, and clergymen. Finally, these should be made up in our faculty and in the diversity of its members, since in many parts of the world their presence of different kinds of members is obligatory in order to provide a balance [43].

It has been concluded in studies conducted in countries with conditions similar to Yemen such as Pakistan and India [12-17] that fundamental changes must be made to improve the quality of dental education, and faculty members must be trained to improve standards [44]. The results of our study are not very different from other studies of medical and dental graduates, but our study provides a detailed look at ethical practices and awareness at the Faculty of Dentistry, Sana'a University in Sana'a, Yemen.

## Conclusion

There is an urgent need for further expansion with regard to the teaching of dental ethics in the Faculty of Dentistry, Sana'a University, and one of the encouraging results of this expansion and interest is that students have shown a good attitude towards their profession and ethical dentistry.

## Ethical approval

Written consent was obtained in all cases. Consent was obtained from participants prior to inclusion in the study. Ethical approval was obtained from the Medical Research and Ethics Committee of the Faculty of Medicine and Health Sciences, Sana'a University with reference number (2023) on 07/9/2021.

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## Conflict Of Interest

No conflict of interest associated with this work.

## Author's Contributions

All authors co-wrote the articles and reviewed the results.

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