Medical Ethics: Knowledge about Confidentiality among Medical University Students, Eastern Province Saudi Arabia

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Abstract: Background: All identifiable patient information, whether written, computerized, visually or audio recorded or simply held in the memory of health professionals, is subject to the duty of confidentiality. Medical students are considered to have the same duties of confidentiality as licensed physicians. The aim of the present study was to assess the knowledge level about confidentiality among fourth year medical students, college of medicine, University of Dammam, Kingdom of Saudi Arabia. **Methods:** This was a cross-sectional study conducted among all 164 fourth year medical students enrolled in the parallel program during their attachment to the family and community medicine training center. Data was collected using an interviewer-administered questionnaire which was consisted of socio-demographic characteristics and questions to assess knowledge about different aspects of confidentiality. Descriptive statistics, Chi-squared and logistic regression tests were used for statistical analysis. **Results:** None of the students had received ethics courses in their basic study and only 11% had attended training courses of less than one month duration about medical ethics. About 41.5% of university students had good level of knowledge regarding different aspects of confidentiality. The only factor that was found to be statistically significant was gender, where 52.2% of females had good knowledge level about confidentiality compared to 17.6% of males (P<0.001). Logistic regression analysis showed that gender and age of the students were the 2 factors predicting knowledge level about confidentiality where females (OR = 5.05, CI=2.1-12.1) and younger students (OR=0.132, CI=0.021-0.828) had better knowledge. **Conclusion:** A quite high proportion of the medical students had good knowledge about confidentiality despite that they didn't receive ethics education in their curriculum. Principles of medical ethics should be incorporated in undergraduate medical training so that students during their training and later on as healthcare providers will understand and apply medical ethics.
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1. Introduction

Patients have a right to expect that information about them will be kept in strict confidence by their doctors. As part of the privilege of the doctor-patient relationship, the doctor has a responsibility to protect the patient's right to confidentiality. This has led to a series of rules that doctors must be aware of and follow in their clinical practice.[1-3] All identifiable patient information, whether written, computerized, visually or audio recorded or simply held in the memory of health professionals, is subject to duty of confidentiality.[4]

The duty of medical confidentiality is an ancient one. The Hippocratic Oath states, "What I may see or hear in or outside the course of treatment which on no account must be spread abroad, I will keep to myself, holding such things shameful to speak about." [5]

Modern medical ethics bases this duty on respect for the autonomy of the patient, on the loyalty owed by the physician, and on the possibility that disregard of confidentiality would discourage patients from revealing useful diagnostic information and encourage others to use medical information to abuse patients.[6-7] Confidentiality has been treated rather carelessly in modern medical care. Providers may speak about patients in public places, such as hospital elevators or cafeteria. Cell phone conversations can broadcast confidential information. Records may not be well secured and may be accessible to many persons, including some who are not health professionals.[6] Confidentiality must be protected, but efforts to protect it may conflict with other social needs, including the ability of health professionals to exchange information when caring for a patient, the right of parents to sensitive health information concerning their children, and the use of data for research, public health, or audit purposes.[6-8] Confidentiality is a stringent, but not unlimited, ethical obligation. The ethical issue, then, is determining what principles and circumstances

justify exception to the rule. The ethical justifications for limiting confidentiality are based on principles of respect for autonomy, assuring that the privacy of a person is protected, and also on the principle of justice, assuring that others are not endangered because they are ignorant of a threat posed by another. In general, two grounds for exception to confidentiality exist: concern for the safety of other specific persons and concern for public welfare. Both involve the possibility that other parties will be unjustly harmed.[6-8]

Medical students are considered to have the same duties of confidentiality as licensed physicians[9,10] although this duty is not a legal responsibility.[11]Medical students have access to patients and their medical records, but there are little known about how well students respect patients' confidentiality.[12] There is limited literature about students' attitudes and behaviors toward patient confidentiality[12], so the aim of the present study was to assess the level of knowledge about confidentiality among fourth year medical students, college of medicine, university of Dammam, Kingdom of Saudi Arabia (KSA).

2. Subjects and Methods

Statistical Design:

This was a cross-sectional study conducted during the years 2009 and 2010 G among fourth year medical students enrolled in the parallel program which is based on problem based learning method, college of medicine, university of Dammam, Eastern KSA. The study sample consists of all 164 fourth year medical students' males and females, Saudi and non Saudi attached to the family and community medicine training center, for their family medicine clerkship rotation during the period of the study.

Technical Design:

Data were collected using an interviewer-administered questionnaire which was designed by the researchers according to medical ethics protocols, textbooks, similar references [1-4,8], Islamic Code of Medical Ethics [13], Islamic code of ethics of medicine and health [14], and The Islamic Charter of Medical and Health Ethics.[15]

The questionnaire was written in Arabic slang and consisted of two main parts:

A-Socio-demographic characteristics of the students: gender, nationality, age, marital status, receiving ethics courses in their basic study and attending any training courses about medical ethics

B-Questions to assess the level of knowledge about different aspects of confidentiality (17 questions)

A scoring system was used, giving a score of one to each correct answer and a score of zero to the wrong answers or do not know. The total confidentiality knowledge score was calculated by summation of the right answers' scores. The maximum total confidentiality score was 17 which was divided into 2 groups namely, good and poor knowledge according to the cut-off points which were determined according to the mean of the distribution. Students who scored less than the cut-off point were considered as poor and those above the cut-off point were considered as good.

Necessary permissions to conduct the study were obtained from concerned authorities and confidentiality of the information was strictly adhered to by assuring the students that no details about their status will be released and data will be only used for research purpose

Statistical Analysis:

The collected data were reviewed, coded, verified and statistically analyzed using the Statistical Package for Social Sciences (SPSS) software version 16. Descriptive statistics for all studied variables, Chi-square, and Fisher's Exact (FET) tests were used. logistic regression analysis was used to find the association between the characteristics of the students (Independent variables) and their level of knowledge (Dependant variable) and *P*-value level of <0.05 was considered significant throughout the study.

3. Results:

Table 1 shows the socio-demographic characteristics of the university students. The majority of students were Saudis (96.3%), single (85.4%), and females (68.9%). None of the students had received ethics courses in their basic study and only 11% had attended training courses of less than one month duration about medical ethics.

The majority of students (86%) recognized that disclosure of patient secret by physician is allowed if it would be beneficial to the society, to prevent commission of crime (79.9%), and in case of communicable diseases(83.5%). On the other hand, 84.1% of the university students had wrongly mentioned that physicians can disclose patient's secretes to a third party member like insurance company or without informing patient's primary treating physician. Moreover, students had wrongly mentioned that minor's secretes can be disclosed by physicians even they were asked to treat them confidentially (62.2%) and even the physician thought that giving information may hurt the minor (32.3%). More than half (54.3%) of students had correctly reported that physicians can disclose patients secretes to patients guardian or spouse if it would be beneficial to them **(Table 2).**

Figure 1 shows the distribution of university students according to their total level of knowledge about confidentiality. About 41.5% of university students had good level of knowledge and 58.4% had poor knowledge regarding different aspects of confidentiality.

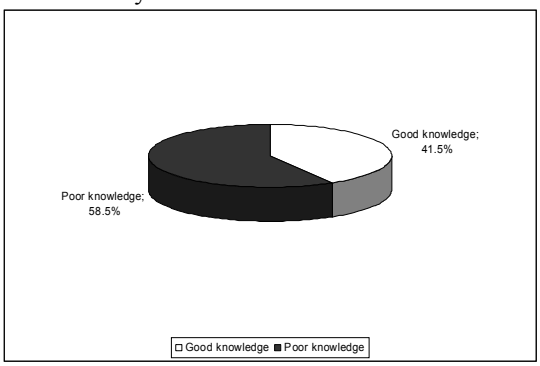

Figure 1: Distribution of university students according to their level of knowledge about confidentiality

By studying the association between the level of knowledge about confidentiality with all students' socio-demographic characteristics, it was found that the only factor that was found to be statistically significant was gender, where 52.2% of females had good knowledge level about confidentiality compared to 17.6% of males (P<0.001) **(Table 3).**

The results of logistic regression analysis of significant factors predicting knowledge level about confidentiality among university students showed that the following factors were found to be independently and significantly associated with good knowledge level: gender where females had better knowledge level (OR = 5.05, CI=2.1-12.1) and the age of students where younger students had better knowledge (OR = 0.132, CI = 0.021-0.828) **(Table 4).**

Table 1: Socio-demographic characteristics of the university students

Socio-demographic characteristics	Total (n= 164)	
	No.	%
1-Nationality:		
Saudi	158	96.3
Non-Saudi	6	3.7
2-Gender:		
Male	51	31.1
Female	113	68.9
3-Age in Years		
20-<24	148	90.2
24-28	16	9.8
4-Marital Status:		
Single	140	85.4
Married	22	13.4
Divorced	2	1.2
5-Medical ethics courses in their basic study	0	0.0
6-Training courses about medical ethics		
No training course	146	89.0
Training courses < 1 month duration	18	11.0

Table 2: Knowledge of university students about confidentiality

Disclosure of patient's secrets by physician is allowed to / in case of :	Total (n=164)	
	No.	%
Others without patient s consent *	8	3.7
His guardian if it would be beneficial to the patient	89	54.3
Concerned authorities if it would be beneficial to the society	141	86.0
Concerned authorities if it would prevent commission of a crime	131	79.9
His spouse if it would be beneficial to his spouse	89	54.3
Judicial authority if he was asked to do so	120	73.2
Concerned authorities in defense against accusations related to physicians efficiency	109	66.5
Concerned authorities in case of communicable diseases	137	83.5
Researchers without patient's consent *	48	29.3
A third party member like an insurance company*	138	84.1
A third party member without informing patient's primary treating physician*	138	84.1
Others for scientific purposes including revealing patient identity *	20	12.2
The medical staff without revealing patient's identity for educational purposes	142	86.6
Others about minors even if he was asked to treat them confidentially *	102	62.2
Others about minors even if he thought giving information may hurt a minor *	53	32.3
Photographing patient's without his consent for scientific purposes *	5	3.0
Photographing patient's face without his written consent for educational purposes after eyes being masked *	7	4.3

* Indicates wrong statement

Table 3: Association between socio-demographic characteristics of the university students and their knowledge regarding confidentiality

Socio-demographic characteristics	Poor knowledge		Good knowledge		Total		FET (*P-value*)
	No.	%	No.	%	No.	%	
Confidentiality							
1-Gender							
Males	42	82.4	9	17.6	51	100.0	17.29
Females	54	47.8	59	52.2	113	100.0	(0.000)

Table 4: Logistic regression analysis of significant factors predicting knowledge level about confidentiality among university students

Variables	B coefficient	S.E. of B	*P*-Value	O.R.	95 % Confidence interval of O.R.	
					Lower	Upper
Gender	1.619	0.446	0.000	5.050	2.108	12.101
Age of the student	2.025	0.937	0.031	0.132	0.021	0.828
Constant	24.399	1.573	-	-	-	-
Model $X^2_{(6)} = 35.27$, $P < 0.001$						

4. Discussion

Confidentiality is an important consideration in everyday practice for doctors and is burdened with ethical and legal dilemmas. Doctors should be aware of their responsibilities, the rights of patients, the rules, and exceptions to the rules.[6,8]

Patients generally accept that "medical students may have access to confidential patient information if they will behave professionally."[16] However, 50% of responding patients in a survey of patients' views on presence of students mentioned that students should not see their medical records.[17]

Teaching about confidentiality is overseen by the United Kingdom General Medical Council (GMC) which states that "Respect for patients' confidentiality is a core skill/attitude that students must acquire".[11] Teaching students about the need for patient confidentiality is widespread internationally but variably delivered.[18] Unfortunately the curriculum of medical students enrolled in our parallel program didn't contain at any stage of their education a formal course about medical ethics. Moreover, only 11% of them had attended courses related to medical ethics by themselves.

Weiss's survey suggests that students have similar attitudes as professionals, with both breaching confidence in ways that patients would not expect.[10] Students recognize breaches as ethically unacceptable [19] but have difficulty applying this knowledge in clinical settings.[20,21]

In the present study, the majority of students recognized that disclosure of patient secret by physician is allowed if it would be beneficial to the society (86%), prevent commission of crime (79.9%),was asked by judicial authority to do so (73.2%), in defense against physician accusations (66.5%) , and in case of communicable diseases(83.5%). A physician may not disclose a personal secret except to concerned but no other party and to the extent that is necessary; if disclosure of a person's secret is done at his own request, which should be in writing or if disclosure of a secret is in the interest of the patient or of society; if asked by a judicial authority; to prevent a crime, in the interest of the patient's spouse; in defending himself and to prevent the spread of an infectious disease.[4,11,13-15]

The majority of students (84.1%) in the present study wrongly mentioned that patient information can be disclosed to a third party like insurance company or to researchers (29.3%) without patients consent. A breach of confidentiality is a disclosure to a third party, without patient consent.[22] Before releasing any information about a patient to third parties such as researchers, pharmaceutical companies, and data collecting institutions, the physician should obtain the patient's informed consent in writing.[4,11,13,14] A physician may release information about a patient to an insurance agent, provided that the patient or his legal representative should consent in writing. The information released should be only what relates to the insurance item

involved. Before disclosing the information, the physician should make the patient aware of the consequences of such disclosure.[4,11,13]

Dilemmas around confidentiality arise when the principle of confidentiality is in possible conflict with other ethical principles such as avoiding harm to the patient or others.[23,24] Sometimes therefore, possible harm to others will override the duty of confidentiality to a patient. However, a careful risk-benefit analysis must be made before such disclosures.[24.25]

About 62.2% and 32.3% of students in the present study had wrongly agreed to disclose information about minors even if they were asked to treat them confidentially or if they think it may harm minor respectively. Literatures about minors had shown that when minor patients ask to be treated in secret, physician should attempt to find out the reason and encourage the patients to get their family involved. A physician may treat underage patients and refrain from revealing any information that may cause harm to the minors in question, unless the existing laws stipulate otherwise.[4,8,13-15]

General knowledge score about different aspects of confidentiality in the present study revealed that 41.5% of medical students had good level of knowledge. This is a surprising figure since the few available studies had shown that in a country like Canada, where a study was done at McGill University among family medicine units' staff to assess their Knowledge of and attitude toward patient confidentiality had shown that they do not fully understand their obligations towards patient confidentiality.[26] Moreover, The principle of confidentiality was also inadequately practiced in **Humayuna *et al.,*** study [27] by more than 90% of outpatient clinic physicians in public hospitals and more than 65% of private hospitals. Furthermore, the practice of confidentiality was more inadequate/ unsatisfactory in the public sector hospital than the private one.[27]

Despite that none of the students had received ethics courses in their basic study and only 11% had attended training courses of less than one month duration about medical ethics, 41.5% of medical students had good level of knowledge about confidentiality. This could be explained by Islamic background of the students which agree with principles of medical ethics regarding the ethical justifications for limiting confidentiality which are based on principles of respect for autonomy, principles of property and contract, assuring that the privacy of a person is protected, and also on the principle of justice, principle of harm and principle of hardness assuring that others or public are not endangered.[13-15] Islamic codes and charters on medical ethics have stressed the rights of the patient as human being in respecting his privacy and confidentiality as part of Muslim believes and as stated in the Glorious Quran, Prophet's Tradition and the rules of the Islamic Jurisprudence.[13-15,28-30]

5. Conclusion and Recommendations:

From the results of the present study, it can be concluded that a quite high proportion of the medical students had good knowledge about confidentiality despite that they didn't receive ethics education in their curriculum. Therefore we recommend that formal teaching and training about principles of biomedical ethics in general including patient ethical and legal rights for privacy and confidentiality, keeping medical records. Principles governing physicians' rights and obligations, and rights to disclose patient information should be incorporated in undergraduate medical training so that students during their training and later on as healthcare providers will understand and apply the concept, and process of medical ethics.

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