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Original Article

Doctor-patient confidentiality: a cross-sectional study of opinions among medical students and doctors

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ABSTRACT

Background: Confidentiality is a fundamental ethical principle. However, its limitations are not always well known by medical professionals. This may lead to breaches or encourage upholding it even when there is an overriding ethical or legal obligation. The aim of this study is to assess the degree of awareness among doctors and medical students in Pakistan, regarding patient confidentiality and its limitations, and what factors influence this awareness.

Methods: A cross-sectional study was carried out including 379 individuals: 217 medical students and 162 doctors from different areas of Pakistan. They were asked to complete a questionnaire that included different scenarios of violation of patient confidentiality. Participants were asked to mark the degree of violation in every case according to their opinion.

Results: 74.9% of the respondents agreed that mentioning names of patients to spouses is a breach of confidentiality. Fewer respondents considered breaches in cases of sharing the diagnosis of a politician without naming (58%); sharing information with another doctor (64.3%), sharing information with the police following a theft (48.5%), sharing information with a forensic pathologist (39.3%), sharing information with non-medical colleagues (77%). A majority (88.1%) considered it unethical for a computer specialist to take home patient information. Opinions were influenced by the age of medical students, but not of doctors.

Conclusion: Our study showed some awareness about confidentiality and its limitations. However, there is a lot of room for improvement. Knowledge of medical professionals remains stagnant throughout their career despite increase in patient exposure and experience. Thus, there is a need for continuous education of students and doctors alike, which currently does not exist internationally. Not only is it important to inculcate medical ethics as an individual subject in the medical degree, but refresher courses should also be conducted for doctors to ensure that they remain mindful and aware of their obligations regarding confidentiality.

Abbreviations
Pakistan Medical and Dental Council (PMDC); Gold standard (GS); Statistical Package for the Social Sciences (SPSS).

Keywords: medical ethics, confidentiality, doctor-patient relationship, medical student.

INTRODUCTION

Medical ethics have been of immense importance in healthcare provision since ancient times, when ethical obligations were summarized in the form of oaths, such as the famous Oath of Hippocrates[1].

Many of the principles upheld in this oath are still applicable today, such as the principle of 'no harm' and the obligation to maintain confidentiality, although there is a shift in their interpretation in modern bioethics from a paternalistic model of the patient-doctor relationship to one revolving around informed consent[2]. As the approach becomes more patient-centered, shared decision making within a trusting doctor-patient relationship has become of immense importance in modern medicine. One of the foundations of this relationship is confidentiality[3].

Medical confidentiality ensures that the treating doctor does not disclose the information provided by the patient without consent to anyone, including the patient's family[4]. This promotes trust, frankness and an open relationship between the doctor and the patient, which improves patient care[5]. However, ethical and legal limitations to confidentiality exist. Ethical balancing of confidentiality against other important values must be carried out by doctors in cases where breaches of confidentiality may be justified. Legal limitations vary slightly from country to country, while ethical limitations should be guided by universal medical ethics. In Pakistan, the ethical framework has been enshrined in the Pakistan Medical and Dental Council Code of Ethics[6].

Situations where a breach is permitted include for example cases when there is high probability that patients will inflict harm, either to themselves or a third party, and that harm can only be avoided if confidentiality is breached. However, even in such situations, the breach of confidentiality is only allowed to the extent necessary and information can only be imparted to the competent authorities[7,8]. Other cases, where a doctor's balancing of principles may lead to a justified breach of confidentiality include the reporting of crimes when patients present with gunshot or knife wounds and the reporting is necessary to prevent further crimes, or when patients are suffering from communicable diseases that present an otherwise unpreventable threat to public health[7]. In many jurisdictions, doctors are also permitted or even required by law to report cases of suspected child abuse[9-11].

Despite the fact that many guidelines have been published regarding the limitations of medical confidentiality, the implementation of these guidelines varies among health professionals according to training and their individual perceptions. Many doctors are unaware of existing legal obligations[12-14]. As a result, unjustified breaches of confidentiality take place that can very easily be prevented through adequate education. Some very common but clearly unjustifiable breaches include discussion of confidential information about directly or indirectly identifiable patients in cafeterias, elevators and waiting rooms[15], where they can easily be overheard, or with spouses at home.

On the other hand, there are cases where doctors might wrongly consider confidentiality as an absolute rule, which cannot be breached under any circumstances. While in some cases maintaining confidentiality very strictly is justified by the fact that breaches would lead to negative consequences, e.g. that sick patients or victims of violence would avoid getting medical treatment, for fear that their information may be revealed[16,17], medical professionals have to be trained to be able to differentiate between breaches authorized or required by law and between ethically justified and unjustified breaches in different circumstances.

This research was designed to identify the level of awareness regarding the aforementioned limitations in confidentiality among doctors of Pakistan and to compare it with the awareness of medical students. The aim is to analyze whether perceptions change with increasing years of experience or whether the views pertaining to confidentiality are individual traits, varying from individual to individual, irrespective of experience and education.

MATERIALS AND METHODS

A cross-sectional study was conducted in March and April 2019, with the approval of the CMH Lahore Medical and Dental College Ethical Review Committee. A total of 500 paper and online questionnaires were distributed via contact persons to an unsystematic sample of medical students and doctors. Inclusion criteria for the doctors was a valid registration under Pakistan Medical and Dental Council (PMDC), and for students was enrollment in a PMDC recognized medical college. Colleges and hospitals where recruitment took place were situated in different regions of Pakistan (Abbottabad, Quetta, Lahore, Muzaffarabad, Wah/Taxila and Islamabad). The questionnaire being used for this survey has been previously used by one of the authors[18,19]. In

this questionnaire, participants were presented with six case scenarios, which are reproduced as follows:

- *Case 1a*

"A physician treats in their private office one of the five male politicians from the cantonal government for a cardiac arrhythmia. The physician mentions this fact to their (the physician's) spouse, who is also a physician, indicating the politician's name."

- *Case 1b*

"Same as case 1a, but the physician mentions the patient's diagnosis to their (the physician's) spouse and the political function (member of the cantonal government), but not the patient's name."

- *Case 2*

"A patient informs her gynaecologist that she is not satisfied with their treatment and tells them the name of the gynaecologist she is going to see for consultation from now on. The first gynaecologist phones their colleague to inform them that the patient is suffering from active hepatitis C."

- *Case 3*

"A patient's purse has been stolen from their coat, which they had left in the waiting room of their general practitioner. At the request of the police, the general practitioner provides the list of all patients they have seen on the day of the theft."

- *Case 4*

"At the request of a forensic pathologist, a surgeon informs them about the medical record of a person who disappeared, in order to compare it with the autopsy record of a cadaver that has been found in the nearby river."

- *Case 5*

"A young woman consults a local accident and emergency service with several broken teeth and other facial injuries of traumatic origin. She says the police have beaten her during the evacuation of a squat. During a dinner party with friends, the physician who has seen the woman in the emergency department mentions these facts without providing the name of the patient but indicating the address of the evacuated squat. Among their friends is a lawyer who is member of the cantonal parliament."

- *Case 6*

"A computer specialist who is repairing the computer of a dermatologist prints out a list with the names of all persons who have been seen on consultation during the past year with indication of the type of treatment received and the paid and unpaid bills."

For each case presented, participants were requested to rate the degree of violation of doctor-patient confidentiality in their opinion on a scale of 0 to 3, where 0 represents no violation of confidentiality, 1 represents violation without importance, 2 represents violation for which physician should receive a warning, and 3 represents serious violation. Ethical and legal analysis of these cases can be found elsewhere as well[18]. The answers of several law professors from Switzerland were considered as gold standard (GS) which are as follows: case 1 (GS score 3), case 2 (GS score 2), case 3 (GS score 3), case 4 (GS score 2), case 5 (GS score 3), case 6 (GS score 3)[18].

The data collected was then analyzed using Statistical Package for the Social Sciences (SPSS) v.20 software (IBM, IL, USA). All quantitative variables were presented as mean (SD) and categorical variables as frequencies and percentages. Spearman's rho was used to analyze association between age of participants' and response to scenarios assessing breech of doctor-patient relationship, on an ordinal scale (0 to 3). Chi-square test of association was used to assess association of gender and background of participants with responses to scenarios. Level of significance was set at $p < 0.05$.

RESULTS AND DISCUSSION

A total of 379 responses were received after distribution of 500 questionnaires (response rate 75.8%, 210 forms were given to doctors with 162 responses and 290 to students, with 217 responses). Among the 379 participants 183 (48.30%) were male and 196 (51.7%) female. A higher percentage of respondents were students 217 (57.30%) and the remaining were doctors 162 (42.7%). Mean age of the student was 20.79 (1.17) years while doctors had a mean age of 34.33 (9.49) years. A majority of the participants belonged to Lahore 171 (45.1%) while the others were from different cities.

All participants provided responses to the entire set of scenarios. A total of 74.9% of the respondents agreed that mentioning names of patients to one's physician spouse is a breach of doctor-patient confidentiality; sharing the patient's diagnosis, profession (a possibly recognizable politician) but not his name with one's physician spouse (58%); sharing a patient's hepatitis status with a colleague (64.3%), sharing information with the police following a theft in a physician waiting room (48.5%), sharing information with a forensic

pathologist to aid legal investigation (39.3%), sharing information of incidents pertaining to a patient with non-medical colleagues (77%) and a majority (88.1%) considered it unethical for computer specialist to take home patient information and bills (Table 1).

Age of medical students was significantly correlated with the scenario 1b ($r= 0.17$, $p = 0.02$), scenario 3 ($r = -0.25$, $p < 0.001$), and scenario 4 ($r = -0.17$, $p = 0.014$), whereas age of doctors did not reveal any significant correlations with responses on scenarios. A higher percentage of males reported that case 1a was not a violation of doctor-patient confidentiality than females ($p = 0.005$). Detailed results are given in Table 2. Comparing with students, a higher proportion of practicing doctors considered case 1b, 3, and 4 to be a violation of doctor-patient relationship, while a higher proportion of students considered case 6 a violation (Table 3).

These results show that although all vignettes presented unjustified violations of confidentiality, many of the participants of this study did not share this opinion for all cases. Case 6 was considered a serious violation by 51.2% of the participants. As in previous studies in Europe[18,19], this shows that even in Pakistan, among all six cases, awareness of unjustified violation is highest in the case of unauthorized data use by an informatician. However, responses to other cases indicate that there is not an in-depth understanding of justified breaches of confidentiality when physicians themselves are responsible for the violation. Sharing information with fellow medical professionals (case 2 and case 4), or the police in a professional setting (case 3) has

Table 1. Frequency of responses to scenarios pertaining to breech of doctor-patient confidentiality

Case No.	Response	Frequency (%)
1a	No violation	95 (25.07%)
	Violation without importance	199 (52.50%)
	Physician should receive a warning	56 (14.8%)
	Serious violation	29 (7.7%)
1b	No violation	159 (41.95%)
	Violation without importance	125 (33%)
	Physician should receive a warning	71 (18.70%)
	Serious violation	24 (6.3%)
2	No violation	135 (35.62%)
	Violation without importance	87 (23.0%)
	Physician should receive a warning	102(26.9%)
	Serious violation	55 (14.5%)
3	No violation	195 (51.45%)
	Violation without importance	81 (21.4%)
	Physician should receive a warning	65 (17.2%)
	Serious violation	38 (10%)
4	No violation	230 (60.67%)
	Violation without importance	82 (21.6%)
	Physician should receive a warning	39 (10.3%)
	Serious violation	28 (7.4%)
5	No violation	87 (22.96%)
	Violation without importance	93 (24.5%)
	Physician should receive a warning	141 (37.2%)
	Serious violation	58 (15.3%)
6	No violation	48 (11.8%)
	Violation without importance	62 (16.4%)
	Physician should receive a warning	78 (20.6%)
	Serious violation	194 (51.2%)

Table 2. Association of responses to scenarios with gender

Case No.	Response	Male Count	Male Percentage	Female Count	Female Percentage
1a	No violation	60	63.2%	35	36.8%
	Violation without importance	91	45.7%	108	54.3%
	Physician should receive a warning	21	37.5%	35	62.5%
	Serious violation	11	37.9%	18	62.1%
1b	No violation	71	44.7%	88	55.3%
	Violation without importance	63	50.4%	62	49.6%
	Physician should receive a warning	34	47.9%	37	52.1%
	Serious violation	15	62.5%	9	37.5%
2	No violation	62	46.3%	72	53.7%
	Violation without importance	48	55.2%	39	44.8%
	Physician should receive a warning	48	47.1%	54	52.9%
	Serious violation	24	43.6%	31	56.4%
3	No violation	96	49.2%	99	50.8%
	Violation without importance	33	40.7%	48	59.3%
	Physician should receive a warning	32	49.2%	33	50.8%
	Serious violation	22	57.9%	16	42.1%
4	No violation	101	43.9%	129	56.1%
	Violation without importance	42	51.2%	40	48.8%
	Physician should receive a warning	23	59.0%	16	41.0%
	Serious violation	17	60.7%	11	39.3%
5	No violation	44	50.6%	43	49.4%
	Violation without importance	46	49.5%	47	50.5%
	Physician should receive a warning	64	45.4%	77	54.6%
	Serious violation	29	50.0%	29	50.0%
6	No violation	24	53.3%	21	46.7%
	Violation without importance	27	43.5%	35	56.5%
	Physician should receive a warning	44	56.4%	34	43.6%
	Serious violation	88	45.4%	106	54.6%

been considered to be a non-violation by most participants. In addition, the severity of the violation has been underestimated. This means that even most physician participants are highly likely to breach confidentiality in situations where they see an ulterior benefit, irrespective of whether the benefit is high enough to outweigh obligations of confidentiality.

In case 1, which addresses the issue of sharing patient information with spouses, when the identity of the patient is not revealed but the profession is (possibly identifiable politician), a significant percentage (41.95%) considered the case not to be any sort of violation. On the other hand, when the identity was revealed, even though a majority considered it a violation, they categorized it as a violation of no importance (52.5%). This shows that doctors in Pakistan are inclined towards sharing patients' confidential health information with their spouses although there is no justification for it. The fact that the spouse is also a physician does not justify the violation as the spouse is not involved themself in the care of this patient. These findings are in line with a research by Weiss where a majority of the physicians accepted that they reveal identifiable information of their patients to their spouses[20]. Interestingly, female participants were significantly more likely to consider it a non-violation when the identity remained hidden, while male participants were more inclined to unjustified breaches than female participants concerning sharing of identifiable patient information with spouses as more men than women considered it a non-violation even when the identity of the patient was revealed.

Table 3. Association of responses to scenarios with occupation

Case No.	Response	Student Count	Student Percentage	Doctor Count	Doctor Percentage
1a	No violation	47	49.5%	48	50.5%
	Violation without importance	123	61.8%	76	38.2%
	Physician should receive a warning	29	51.8%	27	48.2%
	Serious violation	18	62.1%	11	37.9%
1b	No violation	111	69.8%	48	30.2%
	Violation without importance	59	47.2%	66	52.8%
	Physician should receive a warning	40	56.3%	31	43.7%
	Serious violation	7	29.2%	17	70.8%
2	No violation	79	59.0%	55	41.0%
	Violation without importance	54	62.1%	33	37.9%
	Physician should receive a warning	57	55.9%	45	44.1%
	Serious violation	26	47.3%	29	52.7%
3	No violation	132	67.7%	63	32.3%
	Violation without importance	55	67.9%	26	32.1%
	Physician should receive a warning	19	29.2%	46	70.8%
	Serious violation	11	28.9%	27	71.1%
4	No violation	150	65.2%	80	34.8%
	Violation without importance	48	58.5%	34	41.5%
	Physician should receive a warning	15	38.5%	24	61.5%
	Serious violation	4	14.3%	24	85.7%
5	No violation	42	48.3%	45	51.7%
	Violation without importance	59	63.4%	34	36.6%
	Physician should receive a warning	82	58.2%	59	41.8%
	Serious violation	34	58.6%	24	41.4%
6	No violation	15	33.3%	30	66.7%
	Violation without importance	31	50.0%	31	50.0%
	Physician should receive a warning	45	57.7%	33	42.3%
	Serious violation	126	64.9%	68	35.1%

* denotes $p < 0.05$

In Weiss's study mentioned above, he also found that 60% of the physicians stated that they talk to colleagues at parties about identifiable interesting patients. These results differ from our findings as 77% Pakistani participants consider it a violation to share information at a party of a possibly identifiable patient (case 5). The reason for the differences could be that in our case scenario the information was being revealed to non-medical professionals, including a lawyer. Also contrary to our findings, previous studies on domestic violence found that many participants considered it justified to inform a lawyer about police violence against a patient, even if the patient has not consented to it[17,21]. The results in our study could indicate that in Pakistan medical professionals do not attribute enough importance to the reporting of violence. One of the reasons for this finding could be that although the case describes facial injuries that are rarely justifiable during police arrest, participants were not able to distinguish between excessive and appropriate use of police power and might have considered the police action legitimate, which is in line with research by Zubair[22].

Physicians' and medical students' attitudes did not differ significantly for most cases, except cases 1a, 3 and 4 where students were more inclined towards considering the situations non-violations. This shows that, to some extent, with time and experience it might be likely that students improve their understanding of confidentiality in parallel with their increasing level of education and experience,

KEY POINTS

- Doctor-patient confidentiality is the cornerstone of medical ethics. However, doctors need to be fully aware of its intricacies in order to assure that unnecessary violations of confidentiality do no occur on their part.
- There is a need for continuous education of the medical professionals so that avoidable breaches can be prevented.

i.e. that their opinions do not remain stable but evolve towards better understanding of medical confidentiality with increasing contact with patients during their years in medical school. However, at the same time, we did not find any significant change in the opinion of doctors related to years of experience. This could mean that doctors generally do not evolve in their beliefs and an increased exposure to patients does not necessarily improve their understanding of ethical issues related to medical confidentiality.

Limitations of the study

We used an unsystematic sample recruited via contact persons. The majority of the participants belonged to Lahore. The sample may thus not be accurately representative of the entire population of doctors and medical students of Pakistan, especially those belonging to rural areas where the standard of education and understanding of ethics of medical practice are generally considered to be lower than what they are in the urban cities of Pakistan. The unsystematic recruitment also means that we cannot exclude that those who responded over-represent participants who are interested in the topic and attribute particular importance to this ethical and legal issue. However, that does not invalidate our results because if even in this more selected group there are still significant percentages of respondents who are not fully aware of their ethical and legal obligations, this is a clear indication for the need for more education and open discussion of the topic.

CONCLUSION

Our results show that even though there is, to some extent, awareness regarding the importance of patient confidentiality among both doctors and medical students, there is still room for significant improvement. Our medical professionals need to be taught comprehensively how to respect patient confidentiality appropriately and under which conditions breaches are justified. Teaching about medical confidentiality should not only be incorporated more intensively in the medical curriculum at an undergraduate level but also be provided to doctors after graduation in order to make sure that avoidable breaches of confidentiality that occur on a day to day basis can be prevented by ensuring better knowledge about the ethical and legal details among medical professionals.

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Conflict of Interest

The authors declare no competing interests.

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