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ORIGINAL ARTICLE

Health professionals' knowledge and attitude towards patient confidentiality and associated factors.

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ABSTRACT… Objective: To evaluate health professionals' attitudes, knowledge, and related variables regarding patient confidentiality. **Study Design:** Institution Based Cross-sectional study. **Setting:** Gomal Medical College Affiliated Hospitals. **Period:** June-September 2024. **Methods:** Using the stratified random sampling approach, 213 people made up the sample. Bi-variate and multi-variate binary logistic regression analyses were done. Odds ratio, with 95% confidence level and P value were calculated. **Results:** Among 213 participants, 71.4% had good knowledge of confidentiality. Most of doctors 175(82.2%) said that the patients' confidentiality should be maintained and governed by law. While 68.5% with satisfactory attitude towards patients' confidentiality. Doctors working at positions of AP and above (AOR = 6.83 CI= [0.784-59.53]) have good knowledge about patient confidentiality. For factors associated with doctors' attitude towards patient confidentiality, AP and above post level with (AOR=12.29, CI = [1.335-113.3]) have satisfactory attitude towards patients' confidentiality and was highly significant. Those having satisfactory knowledge with (AOR=0.275, CI= [0.141-0.538]) were highly significant for attitude. **Conclusion:** this study revealed that 71.4% participant had satisfactory knowledge and 68.5% had satisfactory attitude towards patient confidentiality and those having satisfactory knowledge of confidentiality had satisfactory attitudes.

Key words: Attitude, Healthcare Professionals, Knowledge, Patient Data Privacy.

INTRODUCTION

Restricting unauthorized parties' access to personal information and only doing so at permitted hours by authorized personnel and in approved ways is known as maintaining confidentiality.[1] Patients' right to secrecy refers to maintaining the privacy of privileged communications, which cannot be shared without the consent of the patient.[2,3] Health providers are obligated by law to handle patient information safely and responsibly. Consequently, trust and a good rapport are built between patients and experts.[4] Inappropriate disclosure of such extremely sensitive data could endanger patient safety. Therefore, maintaining patient anonymity is essential to safeguarding their well-being and upholding the public's confidence in the doctor-patient relationship.[5]

Confidentiality is now acknowledged as a worldwide concern. As a result, there are several globally recognized standards and directives for upholding the privacy of patients while they receive medical care.[6] The Data Protection Act was recently updated in 2018 after it was first passed in 1998 in the UK. Maintaining anonymity is essential to keeping patient-doctor confidence. Since the goal is to enhance patient welfare, the moral foundation is consequentialist. Healthcare professionals make well-balanced decisions about whether to disclose information in the public interest. While a decision is unlikely to be made in a medical emergency, not all situations will allow for a thorough investigation with access to the full range of clinical, ethical, and legal texts and opinions.[7] Patients' confidence is damaged by overheard revelations, which can also cause a rift in their connection with their healthcare staff.[8,9]

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Data exchange and patient medical record confidentiality are fraught with issues. One major problem is the mishandling of patient medical records by unapproved personnel who then transfer them to another department.[10] By taking time, decreasing patient satisfaction, leading to incorrect diagnosis, and making it challenging to obtain the prior history, it might have an impact on patients' quality of treatment.[11] Hippocrates, in 1849, articulated the fundamentals of professional confidentiality when he said, "I will not divulge, as reckoning that all such should be kept secret." This statement applies to both his professional practice and anything else he sees or hears in the lives of men that should not be spoken of abroad. Since then, protecting patients' anonymity has become a legal and ethical obligation for medical personnel and is essential to providing high-quality care.[12]

The literature study indicates that there were not many studies on patient confidentiality and privacy in Dera Ismail Khan, Khyber Pakhtunkhwa, Pakistan, and that health personnel views toward patients' rights received less attention.[13] Thus, the goal of this research was to determine health professionals' awareness of patient confidentiality at a government-run hospital as well as their knowledge, attitudes, and related factors. Moreover, to determine if sociodemographic traits and physicians' awareness of privacy and confidentiality have associations.[14]

METHODS

An Institution based cross-sectional study was conducted among health professionals from 15-June-2024 to 15-sep-2024 in Dera Ismail Khan, located in Khyber Pakhtunkhwa, Pakistan. With IRB No 86/GJMS/JC. Gomal medical college affiliated hospitals, MMMTH and DHQTH Hospital in DI Khan are public sector hospitals that provides a range of medical services to the local population. The hospital has various departments, including medicine, surgery, paediatrics, and gynaecology. It also offers emergency services, outpatient services, and a 24-hour pharmacy. These hospitals have a team of experienced doctors who provide quality care to patients. It has 473 health professional doctors working. Doctors working in the Gomal medical college affiliated hospitals, MMMTH and DHQTH Hospital were the study population. Criteria for inclusion in this study was doctors with a clinical experience of more than 06 months. the study excluded health professionals with less than six months of experience. The sample size was calculated by using online Raosoft sample size calculator. Total 473 doctors working in Gomal Medical College affiliated hospitals, with 95% CI and 50% response rate, the sample size was 213. Using stratified random sampling, the 213 participants were selected. First, the sample was divided into groups according to their designation i.e AP and above (assistant professor and above), PGRs (post graduate residents), MOs (medical officers) and HOs (House officers). To evaluate healthcare professionals' knowledge, attitudes, and related aspects regarding patient confidentiality, the selection process was then proportionately allocated among each stratum based on the number of providers in each stratum. A computer-generated simple random sampling procedure was used to choose the study subjects in each stratum. Which is shown in (Figure-1).

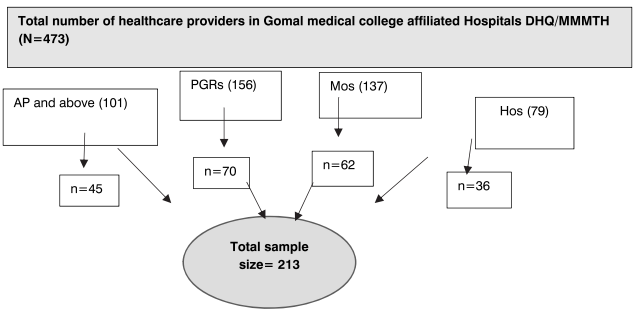

Figure-1. Sample distribution and process of sampling

The primary outcome variable of this study was knowledge and attitude towards patient confidentiality. The questionnaires used in this study were developed based on a review of related literature.[1,2,14] Socio-demographic and work-related characteristics were used as independent variables in this study. Knowledge about the privacy of patients was tested using seven items with "yes" and "no" responses. Each correct answer was equal to one point, while each incorrect answer was equal to zero points, with

a height possible score of 7 for the knowledge portion. Those with score above 60% i.e 4.2 were considered having satisfactory knowledge and those below this thresh-hold, unsatisfactory. Twelve questions with a 4-point Likert scale from "strongly disagree" (score 0) to "strongly agree" (score 4) were used to determine attitudes about patient confidentiality. The attitude section's ultimate score varies from 0 to 48. Those having score above 60 percent i.e 30 were considered having satisfactory attitude toward patients' confidentiality and below 60% were considered unsatisfactory. An English-language, pre-tested, structured questionnaire was used. Prior data gathering procedure training was given to the data collectors to eliminate ambiguity by the research supervisors. Before distribution of questionnaire consent was obtained from the participants and the confidentiality of participant was assured. SPSS version 23 was used for the data input. The sociodemographic factors, along with the knowledge and attitudes of medical professionals regarding patient confidentiality and data sharing, were described using descriptive statistics. To evaluate the relationship between the dependent and independent variables, binary logistic regression analyses, both bivariable and multivariable, were performed. They were evaluated for their adjusted effects on the dependent variables using multivariable regression analysis. To evaluate the statistical significance and determine the strength of the link, odds ratios with a 95% confidence level and P values were computed. The cut-off value was $p < 0.05$ for all variables that were statistically related.

RESULTS

Socio-demographic Characteristics

Out of 213 participants majority were male with n = 133 (62% of total). And the position on which designation the participant were working were as follows: AP and above n = 45 (21.1%), PGRs were a majority with n = 70 (32.9% of total participants). majority of the participant doctors age were between 25-35. Out of 213 respondent's 110 were married. 49.8% participants have working experience less than 5 years. 144(67.6) said that they have get training on medical ethics. The details are given in Table-I.

	Frequency	Percent
Gender		
Male	133	62.4
Female	80	37.6
Designation		
Ap And Above	45	21.1
PGRs	70	32.9
MOs	62	29.1
HOs	36	16.9
Age		
Less than 35 years	162	76.1
>35 years	51	23.9
Marital Status		
Single	103	48.4
Married	110	51.6
Work Experience		
greater than 5 years	107	50.2
less than 5 years	106	49.8
Training on medical ethics		
Yes	144	67.6
No	69	32.4
Number of patients served per day		
more than 40	75	35.2
30-40	56	26.3
less than 30	82	38.5

Table-I. Socio-demographic characteristics of participants

Health professionals' knowledge regarding patients' confidentiality

Total of 213 participants 71.4% had good knowledge of confidentiality. Most of doctors 175(82.2%) said that the patients information confidentiality should be maintained and governed by law. Majority of respondent 62.4% consider non-medical information confidential and its confidentiality should be maintained. About the policies related to access of medical records 71.8% said that it should be only accessible to authorized person only and should not be accessible to third parties without consent 78.9%. And the information should not be shared after the death of patient. Only if the disease is contagious, it should be disclosed to the one in close contact with the patient. The details are given in Figure-2 and Table-II.

	Yes N (%)	No N (%)
Does the law protect confidentiality	175(82.2)	38(17.8)
Is information not related to medicine private	133(62.4)	80(37.6)
Are policies allowing unrestricted access to medical records	60(28.2)	153(71.8)
Can a result be accessed by a third party without the patient's permission	45(21.1)	168(78.9)
If a patient passes away, can confidentiality be breached	61(28.6)	152(71.4)
Can patient confidentiality be breached if the disease contagious	142(66.7	71(33.3)

Table-II. Participants doctors' knowledge about patient confidentiality

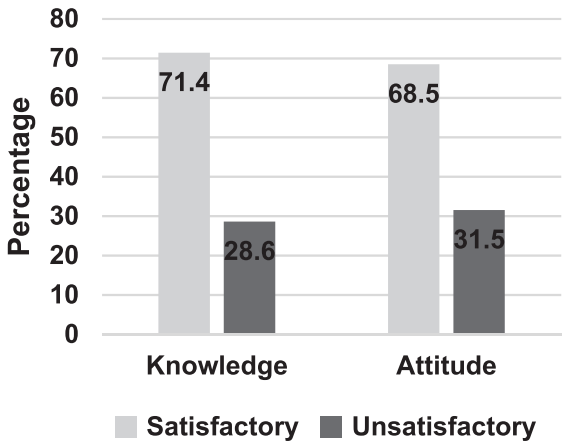

Figure-2. Knowledge and attitude of doctors regarding patients confidentiality

Health professionals Attitude towards patients' confidentiality

The attitude of participants was as follow, 68.5% with adequate towards patients' confidentiality. while majority of doctors when asked the effect of confidentiality breach on patients 124(58.2) strongly agreed that it affect the patients. About 105(49.35) responded that they take the information from patients and document it confidentially. Majority of participants strongly disagree on the entering of non-medical personnel to examination room. While dealing patients with sensitive diseases the majority 121(56.8) strongly agree that it should be handled with more caution. The details are given in Table-III.

Factors related to doctors' knowledge of patient confidentiality

To measure association between doctors' knowledge and the independent variables bi variable binary logistic regression was done for any significance regarding patients' confidentiality. The gender of participants, Designation on which they bare working in a hospital, age of the participants, marital status, work experience, training on medical ethics and number of patients served per day were included in bi variable logistic regression. The details are given in Table-IV.

Factors influencing doctors' attitude regarding patient confidentiality

For factors associated with doctors' attitude towards patient confidentiality in bivariable logistic regression gender, Designation, training on medical ethics, marital status of the participants and with knowledge they had were included to see any significance. AP and above Designation level have (AOR=12.29, CI = [1.335-113.3]) adequate attitude towards patients' confidentiality and was highly significant. While those with satisfactory knowledge having (AOR=0.275, CI=[0.141-0.538]) were highly significant with those having adequate attitude. The details are given in Table-V.

DISCUSSION

An essential and crucial component of practicing medicine professionally is maintaining confidentiality. Hippocrates laid the foundation for professional secrecy in 1849.Ever since, all healthcare practitioners have been required by law and ethics to maintain professional confidentiality and privacy.[12] In this study, we evaluate health professionals' knowledge, attitudes, and related aspects regarding patient confidentiality.This study shows that majority of participants were male, 62.4% which is somewhat similar to a study in Karachi, Pakistan, and one in Ethiopia.[1,15] while different from the study in Malaysia in which 65.69% were females.[4,16]

	SD N(%)	DA N(%)	N N(%)	A N(%)	SA N(%)
Does Confidentiality breach affect patient in any way	12 (5.6)	6 (2.8)	21(9.9)	50 (23.5)	124(58.2)
I communicate with the patient in public about their illness.	116(54.5)	45(21.1)	25(11.7)	13(6.1)	14(6.6)
I make sure to take the information from patient and document it completely confidentially	23(10.8)	13(6.1)	26(12.2)	46(21.6)	105(49.3)
While I'm with patients I allow non-medical personnel (e.g. cleaning staff) to enter the examination room	143(67.1)	16(7.5)	17(8.0)	5(2.3)	32(15.0)
I use Lock to store patient information	45(21.1)	23(10.8)	53(24.9)	40(18.8)	52(24.4)
I use personal computer to store patient information	67(31.5)	39(18.3)	35(16.4)	30(14.1)	42(19.7)
I deal with the information of patients with sensitive diseases with more cautions	12(5.6)	10(4.7)	21(9.9)	49(23.0)	121(56.8)
I use virus protection software on my devices	62(29.1)	26(12.2)	37(17.4)	41(19.2)	47(22.1)
I discussed patient condition with colleagues in open space, such as reception areas and corridors unnecessarily	135(63.4)	25(11.7)	21(9.9)	12(5.6)	20(9.4)
I discuss with a colleague about the patient's condition outside of work	102(47.9)	35(16.4)	35(16.4)	22(10.3)	19(8.9)
I never leave patient information on the desk	27(12.7)	25(11.7)	36(16.9)	48(22.5)	77(36.2)
About the condition of my patient near others, I make or get phone calls.	71(33.3)	47(22.1)	49(23.0)	21(9.9)	25(11.7)

Table-III. Participant doctors' attitudes about patient confidentiality

Characteristics	Knowledge		COR (CI95%)	AOR (CI95%)	P-Value
	Unsatisfactory	Satisfactory			
Gender					
Male	36	97	1.22(0.66-2.25)	1.259(0.695-2.404)	0.513
Female	25	55			
Designation					
Ap And Above	7	38	3.878(1.36-11.0)	6.830(0.784-59.53)	0.011
PGRs	22	48	1.558(0.67-3.58)	1.44(0.594-3.51)	0.296
MOs	17	45	1.891(0.795-4.49)	1.765(0.675-4.615)	0.150
HOs	15	21			
Age					
<35 years	52	110	0.453(0.205-1.00)	1.464 (0.223-9.609)	0.050
>35 years	9	42			
Marital Status					
Single	33	70	0.724(0.399-1.32)	1.04(0.517-2.094)	0.289
Married	28	82			
Work experience					
Greater than 5 years	31	76	0.968(0.534-1.75)	0.614(0.308-1.22)	0.914
Less than 5 years	30	76			
Training on Medical Ethics					
Yes	40	104	1.137(0.60-2.13)	1.080(0.553-2.108)	0.688
No	21	48			
Number of Patients Served Per Day					
More than 40	19	56	1.53(0.765-3.054)	1.161(0.536-2.515)	0.230
30-40	14	42	1.56(0.729-3.319)	1.341(0.592-3.039)	0.253
Less than 30	28	54			

Table-IV. Factors related to doctors' knowledge of patient confidentiality

Characteristics	Attitude		COR (CI95%)	AOR (CI95%)	P-Value
	Inadequate	Adequate			
Gender					
Male	44	89	0.816(0.446-1.49)	0.678(0.340-1.351)	0.51
Female	23	57			
Designation					
Ap And Above	5	40	8.000(2.56-24.92)	12.29(1.335-113.3)	0.000
PGRs	24	46	1.917(0.845-4.346)	1.381(0.553-3.445)	0.119
MOs	20	42	2.100(0.904-4.878)	1.648(0.614-4.423)	0.084
HOs	18	18			
Age					
< 35 years	59	103	0.325(0.143-0.737)	1.874(0.291-12.06)	0.007
>35 years	8	43			
Marital Status					
Single	38	65	0.612(0.342-1.097)	1.075(0.520-2.224)	0.099
Married	29	81			
Work experience					
Greater than 5 years	31	76	0.261(0.706-2.251)	0.787(0.386-1.606)	0.4331
Less than 5 years	36	70			
Training on Medical Ethics					
Yes	45	99	1.030(0.556-1.908)	0.926(0.460-1.864)	0.92
No	22	47			
Number of Patients Served Per Day					
More than 40	22	53	1.706(0.879-3.313)	1.217(0.556-2.667)	0.114
30-40	11	45	2.898(1.312-6.399)	2.63(1.07-6.45)	0.008
Less than 30	34	48			
Knowledge					
Unsatisfactory	33	28	0.244(0.130-0.460)	0.275(0.141-0.538)	0.000
Satisfactory	34	118			

Table-V. Factors influencing doctors' attitude regarding patient confidentiality

Almost half of the doctors (49.8%) were having experience less than 5 years. About 71.4% participants have satisfactory knowledge of confidentiality which is somewhat better than the study in Ethiopia which was 58.9%.[1,2,17] As most of our participants have working experience of less than 5 years, the results show limited knowledge in this regard.[8] There was no significant difference in knowledge with gender.[4]

While in this study attitude of the doctors towards patients' confidentiality was 68.5 % adequate which is like the study in turkey.[18] and that of Baghdad in which 71.1% had positive attitude[19], but it was different from the similar study in Ethiopia in which it was less with 49.5%.[2] Factors that were associated with knowledge such as designation AP and above, were significant

Similarly, factors associated with attitude of doctors' attitude towards patients' confidentiality were designation AP and above level, age of the participants, number of patients served per day and those having satisfactory knowledge, were significant for attitude.

The AP and above category had a significant difference in knowledge as they have more experience of dealing the patients and they have access for the hospital records and while having such sensitive data they took more caution with handling the data as they had more experience of dealing such cases of data breaches. Which is in accordance with the study in Baghdad[19] in which the education level was a significant factor for knowledge of health professionals, while age was not a significant factor for knowledge regarding

confidentiality.[20] The variables that were significant for attitude were the AP and above category having adequate attitude towards patients' confidentiality. The age of participants was also significant for attitude, those participant's dealing with an average low number of patients per day take confidentiality into account this might be due to enough time they get for documentation, locking the Information. This is somewhat different from the study of Riyadh, Saudi[21] in which Those with direct patient contact and those seeing more patients daily have a satisfactory attitude. The attitude of doctors having satisfactory knowledge about confidentiality were more adequate, it was because they have ample of knowledge regarding confidentiality, so their attitudes were more likely influenced, and they took patients' confidentiality into account.[1]

CONCLUSION

In this study, it was discovered that 71.4% of participants had appropriate understanding of patient confidentiality, and 68.5% had satisfactory attitude. Significantly, individuals with AP and above designations had satisfactory attitudes and sufficient knowledge of patient confidentiality. It could be advised to offer health personnel ongoing medical ethics training both before they start working at the hospital and throughout their time there to improve their awareness of and behaviours regarding patient confidentiality.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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2	**Muhammad Junaid Shah:** Data anlaysis, Project admin.
3	**Anil Iqbal:** Data entry and Management.
4	**Musawar Khan:** Provide support in manuscript, Data collection.
5	**Mohammad Osama:** Data collection and Method.
6	**Ahmed Mustafa:** Result part, Data collection.
7	**Fazal Ur Rehman:** Review and Editing the final manuscript.
8	**Samina Qadir:** Review and Editing the final manuscript.