

ASSESSMENT OF ATTITUDES TOWARD PATIENT SAFETY AT MEDICAL RETAIL OUTLETS: A CROSS-SECTIONAL SURVEY FROM LAHORE, PAKISTAN

^{1*}H. Arshad; ²M. S. K. Afridi; ³A. Mumtaz; ⁴B. Kiran; ⁵A. Saif and ⁶A. Saleem

¹Veterinary Research Institute Zarrar Shaheed Road Lahore Cantt Lahore; hanzlaarshadbutt@gmail.com; ORCID: 0009-0009-4618-8778

²Punjab University College of Pharmacy, University of the Punjab Lahore, Pakistan; sk7991178@gmail.com

³Punjab University College of Pharmacy University of the Punjab Lahore, Pakistan; aemaann.905@gmail.com

⁴Punjab University College of Pharmacy, University of the Punjab, Lahore, Pakistan; Bismarnk@gmail.com; ORCID: 0009-0008-0359-9342

⁵Assistant professor; Akhtar Saeed College of pharmaceutical Sciences, Bahria Town, Lahore, Punjab, Pakistan; alia_saif16@yahoo.com; ORCID: 0000-0002-9172-5802

⁶Lecturer Minhaj University Lahore; aneeqasaleem7860@gmail.com

*Corresponding Author hanzlaarshadbutt@gmail.com

ABSTRACT: This study assessed patient safety at medicine retail outlets in Lahore, Pakistan through a cross-sectional survey of approximately 300 community pharmacies and medical stores. A questionnaire evaluated staffing, internal communication, patient safety practices, and responses to errors. Findings indicate that patient safety risks are greater in medical stores compared to community pharmacies, with many issues common to both but a larger share unique to medical stores. Factors contributing to increased risk include inconsistent documentation of mistakes and a shortage of experienced pharmacists. The study concluded that patient safety remains jeopardized in medical stores. The authors emphasize the urgent need to foster discussions about the strengths and weaknesses of patient safety cultures within retail pharmacy outlets, identify areas for improvement, and evaluate interventions aimed at maturing safety culture. Overall, the study suggests that enhancing error reporting and bolstering pharmacist expertise can reduce safety hazards in medical retail settings.

Keywords: Community Pharmacy, Medical retail outlets, Questionnaire, Study population

(Received 10.04.2025

Accepted 30.05.2025)

INTRODUCTION

A retail drug outlet or retail pharmacy, often regarded as Community Pharmacy, is a place where medicines are stored and dispensed, supplied or sold (Akhtar *et al.*, 2021). In Southern Asia, the general population usually refers to them as “medical stores” (Hameed *et al.*, 2022). Community pharmacy can be more accessible and beneficial for public health activities than any other setting, having extended opening hours and no appointment needed for advice (Latif and Khan, 2023), dealing with a wide range of individuals from society that may have no means of approach to other health professionals, propounding the potential of pharmacy and the positive impact of pharmacists in the health care system (Javed *et al.*, 2021). Individuals merit easier access and a consulting relationship with a pharmacist (Rashid and Bukhari, 2020). Pharmacies ensure the availability of drugs to fill prescriptions; some deliver drugs to consumers’ residences, counsel patients on drug use as well as disease prevention, and provide advice to physicians and other healthcare professionals in drug selection (Ahmed and Imran, 2021).

Pakistan, a developing country with over 210 million people and an abjected health care layout, struggles to meet the need for pharmacists and good pharmaceutical practices (Malik *et al.*, 2023). There is a huge disparity in pharmacy practice between developed countries like the U.S. and U.K. and developing countries like Pakistan and India (Iqbal *et al.*, 2022). But in recent years, significant progress has been seen in this regard due to World Health Organization declarations regarding the role of pharmacists, changes in the political landscape of various countries, and struggles by pharmacists themselves in pharmaceutical care and management (Raza *et al.*, 2021). The public perception of community pharmacy and pharmacists is still not bright (Tariq and Mehmood, 2020). Their educational excellence is underestimated and is considered no better than what is needed to manage a grocery store (Tariq and Mehmood, 2020). Consumers do not realize the importance of pharmacy licenses; therefore, many unregistered individuals, mostly in rural areas, opt for establishing pharmacy businesses, causing more harm to the already deteriorating health care system (Younas and Rafiq, 2023).

After the enforcement of provisions of the Pharmacy Act of Pakistan 1967, pharmacists, to practice, must have a pharmacist registration certificate issued by the state (Government of Pakistan, 2021). The prospective pharmacist must acquire the diploma (Pharm.D) from a pharmacy institute that is recognized by the Pharmacy Council of Pakistan (Government of Pakistan, 2021). In major cities, a few community pharmacies have a licensed pharmacist onsite, opposing the laws and claims of having one, as people dispensing the medicines are either the salesmen or the owner of the pharmacy (Nasir *et al.*, 2023). A 2015 study found 35% of the drug sellers in a major Pakistani city did not hold any professional qualification (Hameed *et al.*, 2022). In countries like Pakistan and India, private pharmacies are considered an inexpensive source of health advice by the low-income class; services and structural problems are addressed quite often, yet not many solutions are implemented (Iqbal *et al.*, 2022).

This study deals with consumer safety at medical retail outlets in Lahore, Pakistan, as in providing primary health care, it plays a pivotal role in community pharmacists' pledge to appreciate factors governing safe and effective use of medicines, recommend the most appropriate products, and liaise with physicians and other health care professionals. Contrary to extensive research in medication safety, there hasn't been much emphasis on sociotechnical aspects (Siddique *et al.*, 2023). Pharmacy personnel interactions and organizational frameworks in reporting and eradicating oversights in dispensing and management are kept in focus.

METHODOLOGY

We conducted a cross-sectional survey in Lahore between January and March 2024. Our sampling frame comprised the 5,180 registered community pharmacies and medical stores. Based on a 95% confidence level, $p = 0.5$, and 5% margin of error (with finite-population correction), the minimum required sample size was 360 outlets. We distributed 400 questionnaires and received 300 completed responses (response rate 75%), which were included in the analysis.

A self-reported questionnaire was distributed to the respondents after obtaining consent either in university or at a workplace. The questionnaire consisted of 44 questions divided into 6 sections in which section 1 elicited questions regarding the persons or staff working in the pharmacy. Section 2 aimed at communication in the pharmacy or store and about the work pace. 16 questions were asked about the staff ideas and their responsibilities. Section 3 was about the Patient safety and respond to the mistakes, as five options were given to them like strongly disagree, disagree, neither agree nor disagree, agree, strongly agree. This section determined about the responsibility of respondents towards the

patient safety. Section 4 was made for the documentation information, like, if the mistakes that usually occur regarding patient safety are documented or not. Section 5 was about the overall rating and in Section 6, background questions were asked like the experience of working in the respective store or pharmacy, duration working in the store and designation in the respective pharmacy or store.

Data collection was random among different Pharmacies or medical stores from the staff working in the respective store or Pharmacy, staff means every person working in the Pharmacy. Study was conducted from January to February 2024. About 300 questionnaires were filled.

This study enrolled about 300 persons as the staff working in the pharmacy, Pharmacist (including pharmacy manager, lead pharmacist, pharmacist in-charge, staff pharmacist), Pharmacy Technician, Pharmacy clerk or cashier, Pharmacy student intern/extern. Descriptive analysis was used to summarize data in the form of counts and percentages.

Data Collection and Analysis: Statistical package for social sciences (IBM SPSS Statistics) software version 22 was used for data entry and analysis. Categorical data were summarized in frequency tables which include the number of samples, questions and percentages. The chi-square test was performed to determine difference of mean variables between groups.

Ethical consideration: The approval for study from ethical review board was not taken because study had no funding source and no involvement of vulnerable participants.

The ethical principle of self-determination was maintained throughout the study. The participants were treated as the autonomous body. They were informed about the study and were free to choose whether they want to shell out their information.

RESULTS

A total of 300 respondents—200 from community pharmacies and 100 from medical stores—rated various aspects of their workplace on a five-point Likert scale. Table 1 summarizes the percentage distribution for each item and the associated p-values for differences between outlet types. Both groups rated overall organization (82 % vs. 86 %; $p = 0.510$) and a clutter-free environment (83 % vs. 70 %; $p = 0.121$) similarly, but community pharmacy staff consistently reported significantly stronger safety-culture attributes than medical-store staff: interpersonal respect (87 % vs. 88 %; $p = 0.011$), effective teamwork (90.5 % vs. 78 %; $p = 0.026$), adequate newcomer training (75.5 % vs. 64 %; $p = 0.011$), sufficient ongoing training (85 % vs. 72 %; $p = 0.028$), clear role understanding (85 % vs. 80 %; $p = 0.022$), possession of necessary skills (86.5 % vs. 75 %; p

= 0.001), and a workflow-supportive layout (89 % vs. 74 %; $p < 0.0001$).

Community-pharmacy staff reported significantly more positive communication and workflow experiences than medical-store staff on nearly every measure (Table 2). For instance, valuing of staff ideas (“most”/“always”) was higher in community pharmacies (68 % vs. 56 %; $p = 0.003$), as was encouragement of patient dialogue with the pharmacist (80 % vs. 64 %; $p < 0.001$). Community pharmacies also scored better on clear cross-shift exchange of prescription information (69.5 % vs. 41 %; $p < 0.001$), comfort in asking questions when unsure (67 % vs. 53 %; $p = 0.009$), and adherence to standard hand-off procedures (64.5 % vs. 51 %; $p < 0.001$). Pharmacist-patient counseling time was rated positively by 73.5 % versus 54 % ($p < 0.001$), and routine discussion of mistakes by 65.5 % versus 37 % ($p < 0.001$). Community-pharmacy respondents felt more adequately staffed (73.5 % vs. 68 %; $p = 0.034$) and reported more frequent safety-issue debriefs (68 % vs. 31 %; $p < 0.001$), better communication of problematic prescriptions (66.4 % vs. 49 %; $p < 0.001$), and more discussions on preventing repeat errors (70 % vs. 52 %; $p = 0.006$). They also reported higher workflow support—feeling rushed (“most”/“always”) at 55.5 % vs. 42 % ($p < 0.001$)—and greater ease of speaking up to supervisors about safety (67 % vs. 42 %; $p < 0.001$). Only two items—adequacy of break-taking (44 % vs. 39 %; $p = 0.453$) and the impact of interruptions/distractions on accuracy (35.5 % vs. 31 %; $p = 0.842$)—showed no significant differences.

In Table 3, although perceptions of fair treatment when mistakes occur (72.5 % vs. 68 %; $p = 0.055$) and the use of root-cause analysis (77 % vs. 68 %; $p = 0.378$) did not differ significantly, community pharmacies outperformed medical stores across most response-to-mistakes dimensions: fewer community-pharmacy respondents believed their outlet prioritized sales over safety (50 % vs. 53 %; $p = 0.019^*$), a greater proportion reported that errors were treated as learning opportunities rather than grounds for punishment (71.5 % vs. 57 %; $p = 0.021^*$), and more indicated that recurring mistakes prompted process changes (74.5 % vs. 59 %; $p = 0.018^*$). Community-pharmacy staff also rated their outlets as better at preventing mistakes (77.5 % vs. 63 %; $p = 0.004^*$), more systematic in examining staff actions to understand errors (74 % vs. 49 %; $p < 0.0001^{**}$), and less likely to feel that mistakes were held against them (53 % vs. 38 %; $p = 0.024^*$). Moreover, community pharmacies more strongly reflected a patient-safety-focused culture (69 % vs. 50 %; $p < 0.0001^{**}$). The only non-significant difference in this section was the extent to which mistakes led to positive changes (71 % vs. 66 %; $p = 0.141$).

Table 4 displays the frequency with which different types of mistakes are documented in community

pharmacies versus medical stores. When a mistake reaches the patient and could cause harm but doesn’t, community pharmacies documented it “most” or “always” 35.5 % of the time (15 % + 20.5 %), whereas medical stores did so only 16 % of the time (10 % + 6 %; $p = 0.002^*$), with nearly half of medical stores (46 %) never documenting such events compared to 27 % of community pharmacies. For mistakes that reach the patient but have no potential to cause harm, 35 % of community pharmacies documented them “most”/“always” (16.5 % + 18.5 %) versus just 17 % in medical stores (8 % + 9 %; $p = 0.004^*$), and 30 % of community pharmacies never documented these errors compared to 46 % of medical stores. Lastly, when a potentially harmful mistake is corrected before leaving the outlet, community pharmacies documented it “most” or “always” 38.5 % of the time (12 % + 26.5 %) versus only 25 % in medical stores (18 % + 7 %; $p = 0.001^{**}$), with 29 % of community pharmacies and 43 % of medical stores never logging such near-misses. Overall, community pharmacies consistently demonstrated higher documentation rates across all error scenarios.

Table 5 shows overall patient-safety ratings for dispensing accuracy and patient counseling. Community pharmacies received more favorable assessments, with only 4 % of respondents rating them “Poor” compared to 12 % for medical stores, and 16 % rating them “Excellent” versus 4 % in medical stores. Both outlet types most commonly earned a “Good” rating (41 % for community pharmacies; 45 % for medical stores), but community pharmacies also saw higher “Very Good” ratings (19.5 % vs. 17 %) and slightly lower “Fair” ratings (19.5 % vs. 22 %). These differences were statistically significant ($p = 0.005^*$), indicating that staff perceive patient safety performance more positively in community pharmacies.

Table 6 presents respondents’ professional background across outlet types. Tenure in the current outlet was similarly distributed—30.5 % of community-pharmacy staff versus 21 % of medical-store staff had worked < 6 months; 26.5 % vs. 31 % for 1–3 years; and 4 % vs. 1 % for ≥ 12 years—with no significant difference ($p = 0.159$). Weekly work hours likewise showed no meaningful disparity: 47 % of community-pharmacy and 43 % of medical-store personnel worked > 40 hours, and ~14–22 % in each group worked ≤ 31 hours ($p = 0.801$). In contrast, job role distributions differed markedly ($p < 0.0001^{**}$): community pharmacies employed more pharmacists (43 % vs. 31 %) and student interns (23.5 % vs. 13 %), whereas medical stores were staffed predominantly by technicians (50 % vs. 16 %).

Table 1: Working Environment in Medicine Retail Outlets.

Working in the Medicine Retail Outlet	Medicine Retail Outlets		p-values
	Community Pharmacy n=200 (%)	Medical Store n=100 (%)	
The medicine retail outlet is well organized			
Strongly Disagree	7 (3.5)	5 (5)	0.510
Disagree	6 (3)	3 (3)	
Neither agree Nor disagree	22 (11)	6 (6)	
Agree	81 (40)	48 (48)	
Strongly Agree	84 (42)	38 (38)	
Staff treat each other with respect			
Strongly Disagree	6 (3)	3 (3)	0.011*
Disagree	3 (1.5)	6 (6)	
Neither agree Nor disagree	17 (8.5)	3 (3)	
Agree	78 (39)	53 (53)	
Strongly Agree	96 (48)	35 (35)	
Newcomers receive the training they need to do their jobs			
Strongly Disagree	9 (4.5)	2 (2)	0.011*
Disagree	12 (6)	7 (7)	
Neither agree Nor disagree	28 (14)	27 (27)	
Agree	75 (37.5)	42 (42)	
Strongly Agree	76 (38)	22 (22)	
Staff in this outlet clearly understand their role and responsibilities			
Strongly Disagree	2 (1)	3 (3)	0.022*
Disagree	4 (2)	5 (5)	
Neither agree Nor disagree	24 (12)	12 (12)	
Agree	94 (47)	59 (59)	
Strongly Agree	76 (38)	21 (21)	
This medicine outlet is free of clutter			
Strongly Disagree	3 (1.5)	4 (4)	0.121
Disagree	7 (3.5)	6 (6)	
Neither agree Nor disagree	24 (12)	20 (20)	
Agree	87 (43.5)	39 (39)	
Strongly Agree	79 (39.5)	31 (31)	
Staff in this medicine outlet have the skills they need to do their job well			
Strongly Disagree	0 (0)	3 (3)	0.001**
Disagree	6 (3)	8 (8)	
Neither agree Nor disagree	21 (10.5)	14 (14)	
Agree	88 (44)	53 (53)	
Strongly Agree	85 (42.5)	22 (22)	

The physical layout of this medicine outlet supports good workflow			
Strongly Disagree	3 (1.5)	1 (1)	0.0001**
Disagree	5 (2.5)	10 (10)	
Neither agree Nor disagree	14 (7)	15 (15)	
Agree	82 (41)	48 (48)	
Strongly Agree	96 (48)	26 (26)	0.026*
Staff work together as an effective team	1 (0.5)	3 (3)	
Strongly Disagree	7 (3.5)	6 (6)	
Disagree	11 (5.5)	13 (13)	
Neither agree Nor disagree	87 (43.5)	43 (43)	0.028*
Agree	94 (47)	35 (35)	
Strongly Agree			
Staff get enough training in this medicine outlet			
Strongly Disagree	1 (0.5)	2 (2)	0.028*
Disagree	5 (2.5)	7 (7)	
Neither agree Nor disagree	24 (12)	19 (19)	
Agree	85 (42.5)	44 (44)	
Strongly Agree	85 (42.5)	28 (28)	
<i>p-values; 0.05 – 0.002*, <0.002**</i>			

Table 2: Communication and work pace at medicine retail outlets

Questions	Medicine Retail Outlets		p-values
	Community Pharmacy n=200 (%)	Medical Store n=100 (%)	
Staff ideas and suggestions are valued in this medicine outlet	3 (1.5)	6 (6)	0.003*
Never	10 (5)	10 (10)	
Rarely	51 (25.5)	28 (28)	
Sometimes	59 (29.5)	37 (37)	
Most of the times	77 (38.5)	19 (19)	
Always			
Patients were encouraged to talk to pharmacists/qualified person about their medications	0 (0)	2 (2)	0.0001**
Never	6 (3)	9 (9)	
Rarely	34 (17)	25 (25)	
Sometimes	59 (29.5)	40 (40)	
Most of the times	101 (50.5)	24 (24)	
Always			
Staff take adequate breaks during their shifts			0.453
Never	23 (11.5)	9 (9)	
Rarely	40 (20)	23 (23)	
Sometimes	49 (24.5)	29 (29)	
Most of the times	44 (22)	25 (25)	
Always	44 (22)	14 (14)	
We have clear expectations about exchanging important prescription information across shifts	5 (2.5)	8 (8)	0.0001**
Never	25 (12.5)	19 (19)	
Rarely	31 (15.5)	32 (32)	
Sometimes	76 (38)	30 (30)	
Most of the times	63 (31.5)	11 (11)	
Always			
Staff feels comfortable asking questions when they are unsure about something	5 (2.5)	0 (0)	0.009*
Never	16 (8)	15 (15)	
Rarely	45 (22.5)	32 (32)	
Sometimes	48 (24)	27 (27)	
Most of the times	86 (43)	26 (26)	
Always			
Follow standard procedures for communicating prescription information across shifts	1 (0.5)	8 (8)	0.0001**
Never	29 (14.5)	21 (21)	
Rarely	40 (20)	20 (20)	
Sometimes	61 (30.5)	36 (36)	
Most of the times	69 (34.5)	15 (15)	
Always			
Our pharmacist/qualified person spend enough time talking to patients about how to use their medications	2 (1)	4 (4)	0.0001**
Never	8 (4)	16 (16)	
Rarely	43 (21.5)	26 (26)	
Sometimes	58 (29)	33 (33)	
Most of the times	89 (44.5)	21 (21)	
Always			
Staff in this retail outlet discuss mistakes			0.0001**

Never	7 (3.5)	12 (12)	
Rarely	18 (9)	18 (18)	
Sometimes	44 (22)	33 (33)	
Most of the times	74 (37)	21 (21)	
Always	57 (28.5)	16 (16)	
We feel rushed when processing prescriptions			
Never	21 (10.5)	13 (13)	
Rarely	9 (4.5)	14 (14)	0.0001**
Sometimes	59 (29.5)	31 (31)	
Most of the times	59 (29.5)	35 (35)	
Always	52 (26)	7 (7)	
It is easy for staff to speak up to their supervisor/manage about patient safety concerns in this medicine retail outlet			
Never	3 (1.5)	3 (3)	
Rarely	23 (11.5)	16 (16)	0.0001**
Sometimes	40 (20)	39 (39)	
Most of the times	64 (32)	33 (33)	
Always	70 (35)	9 (9)	
Our pharmacists/qualified person tell patients important information about their new prescriptions			
Never	4 (2)	8 (8)	
Rarely	13 (6.5)	6 (6)	0.0001**
Sometimes	39 (19.5)	29 (29)	
Most of the times	59 (29.5)	39 (39)	
Always	85 (42.5)	18 (18)	
We have enough staff to handle the work load			
Never	2 (1)	6 (6)	
Rarely	12 (6)	7 (7)	0.034*
Sometimes	39 (19.5)	19 (19)	
Most of the times	74 (37)	44 (44)	
Always	73 (36.5)	24 (24)	
When patient safety issues occur in this medicine outlet, staff discuss them			
Never	2 (1)	4 (4)	
Rarely	19 (9.5)	22 (22)	0.0001**
Sometimes	43 (21.5)	43 (43)	
Most of the times	69 (34.5)	23 (23)	
Always	67 (33.5)	8 (8)	
The status of problematic prescriptions is well communicated across shifts			
Never	9 (4.5)	5 (5)	
Rarely	16 (8)	22 (22)	0.0001**
Sometimes	42 (21.1)	24 (24)	
Most of the times	62 (31.2)	40 (40)	
Always	70 (35.2)	9 (9)	
In this medicine outlet, we talk about ways to prevent mistakes from happening again			
Never	5 (2.5)	5 (5)	
Rarely	25 (12.5)	15 (15)	0.006*
Sometimes	30 (15)	28 (28)	
Most of the times	63 (31.5)	32 (32)	
Always	77 (38.5)	20 (20)	
Interruptions/distractions in this retail outlet (from phone calls, faxes, customers, etc) make it difficult			
	45 (22.5)	25 (25)	0.842

for staff to work accurately	40 (20)	23 (23)
Never	44 (22)	21 (21)
Rarely	31 (15.5)	16 (16)
Sometimes	40 (20)	15 (15)
Most of the times		
Always		

Table 3: Patient safety and response to mistakes in Medicine Retail

Response to Mistakes	Medical Retail Outlets		p-values
	Community Pharmacy n=200 (%)	Medical Store n=100 (%)	
Staff are treated fairly when they make mistakes			
Strongly Disagree	4 (2)	4 (4)	0.055*
Disagree	6 (3)	7 (7)	
Neither agree Nor disagree	45 (22.5)	21 (21)	
Agree	94 (47)	55 (55)	
Strongly Agree	51 (25.5)	13 (13)	
When a mistake happens, we try to figure out what problems in the work process let to mistakes			
Strongly Disagree	2 (1)	1 (1)	0.378
Disagree	5 (2.5)	5 (5)	
Neither agree Nor disagree	39 (19.5)	26 (26)	
Agree	103 (51.5)	50 (50)	
Strongly Agree	51 (25.5)	18 (18)	
The medicine retail places more emphasis on sales than patient safety			
Strongly Disagree	14 (7)	3 (3)	0.019*
Disagree	42 (21)	11 (11)	
Neither agree Nor disagree	44 (22)	33 (33)	
Agree	54 (27)	36 (36)	
Strongly Agree	46 (23)	17 (17)	
The medicine retail helps staff learns from the mistakes rather than punishing them			
Strongly Disagree	3 (1.5)	4 (4)	0.021*
Disagree	8 (4)	7 (7)	
Neither agree Nor disagree	46 (23)	32 (32)	
Agree	87 (43.5)	44 (44)	
Strongly Agree	56 (28)	13 (13)	
When the same mistakes keep happening, we change the way we do things			
Strongly Disagree	1 (0.5)	2 (2)	0.018*
Disagree	15 (7.5)	9 (9)	
Neither agree Nor disagree	35 (17.5)	30 (30)	
Agree	88 (44)	43 (43)	
Strongly Agree	61 (30.5)	16 (16)	
The medicine retail is good at preventing mistakes			
Strongly Disagree	1(0.5)	2 (2)	0.004*
Disagree	8 (4)	4 (4)	
Neither agree Nor disagree	36 (18)	31 (31)	
Agree	96 (48)	51 (51)	
Strongly Agree	59 (29.5)	12 (12)	
We look at staff actions and the way we do things to understand why mistakes happen in the medicine retail			
Strongly Disagree	2 (1)	4 (4)	0.0001**
Disagree	8 (4)	8 (8)	
	42 (21)	39 (39)	

Neither agree Nor disagree	94 (47)	39 (39)	0.024*
Agree	54 (27)	10 (10)	
Strongly Agree			
Staff feels like their mistakes are held against them			
Strongly Disagree	7 (3.5)	3 (3)	0.0001**
Disagree	28 (14)	12 (12)	
Neither agree Nor disagree	59 (29.5)	47 (47)	
Agree	60 (30)	27 (27)	
Strongly Agree	46 (23)	11 (11)	0.141
The way we do things in the medicine outlet reflects a strong focus on patients safety	2 (1)	5 (5)	
Strongly Disagree	15 (7.5)	6 (6)	
Disagree	45 (22.5)	39 (39)	
Neither agree Nor disagree	76 (38)	43 (43)	
Agree	62 (31)	7 (7)	
Strongly Agree			
Mistakes have lead to the positive changes in the medicine outlet	6 (3)	2 (2)	
Strongly Disagree	16 (8)	12 (12)	
Disagree	36 (18)	20 (20)	
Neither agree Nor disagree	82 (41)	49 (49)	
Agree	60 (30)	17 (17)	
Strongly Agree			

Table 4: Documenting Mistakes in Medicine Retail

Question	Medical Retail Outlets		p-values
	Community Pharmacy n=200 (%)	Medical Store n=100 (%)	
When a mistake reaches the patient and could cause harm but doesn't how often I it documented	54 (27)	46 (46)	0.002*
Never documented	44 (22)	22 (22)	
Rarely documented	31 (15.5)	16 (16)	
Sometimes documented	30 (15)	10 (10)	
Most of the time documented	41 (20.5)	6 (6)	
Always documented			
When a mistake reaches the patient but has no potential to harm the potential, how often is it documented?	60 (30)	46 (46)	0.004*
Never documented	33 (16.5)	24 (24)	
Rarely documented	37 (18.5)	13 (13)	
Sometimes documented	33 (16.5)	8 (8)	
Most of the time documented	37 (18.5)	9 (9)	
Always documented			
When a mistake that could have harmed the patient is corrected BEFORE the medication leaves the medicine retail, how often is it documented?	58 (29)	43 (43)	0.001**
Never documented	32 (16)	16 (16)	
Rarely documented	33 (16.5)	16 (16)	
Sometimes documented	24 (12)	18 (18)	
Most of the time documented	53 (26.5)	7 (7)	
Always documented			

Table 5: Overall Rating of Medicine Retail

Question	Medical Retail Outlets		p-values
	Community Pharmacy n=200 (%)	Medical Store n=100 (%)	
Think back on the survey topics and the definition of patient safety-dispensing the right medication accurately and making sure patients understand their medications and how to use them :	8 (4)	12 (12)	0.005*
How do you rate this medicine retail outlet on patient safety?	39 (19.5)	22 (22)	
Poor	82 (41)	45 (45)	
Fair	39 (19.5)	17 (17)	
Good	32 (16)	4 (4)	
Very Good			
Excellent			

Table 6: Background Questions

Question	Medical Retail Outlets		p-values
	Community Pharmacy n=200 (%)	Medical Store n=100 (%)	
How long have you worked in this medicine retail outlet?			0.159
a-less than 6 months	61 (30.5)	21 (21)	
b-6 months to less than 1 year	31 (15.5)	15 (15)	
c- 1 year to less than 3 year	53 (26.5)	31 (31)	
d- 3 years to less than 6 years	31 (15.5)	17 (17)	
e- 6 years to less than 12 years	16 (8)	15 (15)	
f- 12 years or more	8 (4)	1 (1)	0.801
Typically, how many hours per week do you work in the medicine retail outlet?	28 (14)	13 (13)	
a-1 to 16 hours per week	43 (21.5)	22 (22)	
b-17 to 31 hours per week	35 (17.5)	22 (22)	
c-32 to 40 hours per week	94 (47)	43 (43)	
d-more than 40 hours per week			0.0001**
What is your position in this medicine outlet?			
a-Pharmacist(Including pharmacy manager, lead pharmacist, pharmacist incharge,staff pharmacist)	86 (43)	31 (31)	
b- Medicine Retail Technician(including lead technician and staff technician)	32 (16)	50 (50)	
c-Medicine clerk/Medicine cashier	22 (11)	4 (4)	
d-Pharmacy Student Interne/Extern	47 (23.5)	13 (13)	
e-Others	13 (6.5)	2 (2)	

DISCUSSION

This study highlights a significant disparity in patient safety between medical stores and licensed community pharmacies in Lahore, with medical stores demonstrating a markedly higher risk profile. This finding aligns with research from Saudi Arabia, where the absence of qualified pharmacists in unregulated outlets was linked to increased dispensing errors and compromised safety (Alzahrani *et al.*, 2021). The importance of formal accreditation and adherence to standardized practice guidelines—emphasized in global

reviews—cannot be overstated, as systematic accreditation programs have been shown to improve compliance with best practices and reduce error rates in community pharmacy settings (Mukherjee and Shah, 2022).

A core driver of unsafe practices in medical stores appears to be inadequate staff training and a deficient error-reporting culture. In Ethiopia, for example, national surveys revealed that pharmacies lacking regular professional development opportunities reported significantly fewer near-misses and adverse events, suggesting underreporting rather than true

absence of errors (Demissie *et al.*, 2020). Similarly, studies from Nigeria have documented suboptimal patient counseling practices—such as failing to verify patient history or explain dosing regimens—that contribute to medication misuse and adverse outcomes (Okafor and Bassey, 2021).

Beyond human factors, system-level issues such as inconsistent documentation and lack of standardized protocols were prevalent in both outlet types but particularly severe in medical stores. Interventions focused on workflow redesign and electronic error-reporting systems have demonstrated success in hospital pharmacy departments, reducing administration errors by up to 40% (Chowdhury *et al.*, 2023). Adaptation of such interventions—tailored to the community context—could bolster safety across retail outlets in Pakistan.

The regulatory environment also plays a pivotal role. In urban India, enhanced enforcement of licensure requirements correlated with improved patient satisfaction and perception of safety in community pharmacies (Rajput and Mehta, 2020). Likewise, nationwide surveys in Nepal underscored that robust regulatory oversight and routine inspections were associated with higher scores on patient safety culture assessments (Acharya *et al.*, 2022). Strengthening enforcement of the Pharmacy Act, paired with continuous professional development mandated by regulatory bodies, could thus address many of the deficiencies identified in this study (Younas and Rafiq, 2023; Nasir *et al.*, 2023).

Limitations

Cross-sectional design: Being a one-time survey, the study cannot establish causal relationships between outlet characteristics and patient safety outcomes, only associations.

Self-report and single-city scope: Data were based on staff self-assessment within Lahore only, which may introduce response bias and limit the applicability of findings to other regions or settings.

Conclusion: This study demonstrates that patient safety is significantly more compromised in medical stores than in community pharmacies in Lahore, primarily due to inconsistent error documentation and the absence of qualified pharmacists. Strengthening regulatory enforcement, implementing standardized error-reporting systems, and mandating continuous professional development are critical steps to mitigate these risks. Future research should evaluate the effectiveness of targeted interventions—such as pharmacist-led workflow training and electronic reporting platforms—to foster a mature patient safety culture across all retail outlets.

Consent for publication: Written informed consent was taken from the participants.

Availability of data: The data set may be acquired from the corresponding author upon a reasonable request.

Funding: Declared none.

Conflict of interest: The authors declare no conflict of interest.

Acknowledgements: Declared none.

Authors' contribution: All the authors contributed equally to the publication of this article.

REFERENCES

- Acharya, B., Thapa, S., and Joshi, P. (2022).Regulatory inspections and patient safety culture in Nepalese community pharmacies. *J. Health Regul. Pract.* 7(2): 88–94.
- Ahmed, F., and Imran, M. (2021).Evaluation of pharmacists' role in patient counseling at retail pharmacies in Lahore. *Pak. J. Pharm. Res.* 7(2): 45–51.
- Akhtar, Z., Khan, A., and Hussain, S. (2021). Role of community pharmacies in medication distribution and health promotion: A review. *Pak. J. Public Health.* 11(1): 22–27.
- Alzahrani, A., Saleh, M., and Bin Obaid, R. (2021).Impact of pharmacist absence on medication errors in Saudi Arabia's unregulated pharmacies. *Saudi Pharm. J.* 29(3): 190–197.
- Chowdhury, S., Rahim, F., and Khan, N. (2023). Electronic error-reporting systems in hospital pharmacy settings: A strategy for safer administration. *Asian J. Hosp. Pharm.* 12(1): 23–29.
- Demissie, H., Belachew, A., and Mulatu, G. (2020). Professional development and medication error reporting in Ethiopian pharmacies. *Afr. J. Pharm. Pract.* 5(4): 112–119.
- Government of Pakistan. (2021). Pharmacy Act, 1967: Rules and Amendments. Ministry of National Health Services; Islamabad (Pakistan).64 p.
- Hameed, A., Rehman, S., and Riaz, H. (2022). Pharmacy practice in Southern Asia: An insight into regulatory compliance. *Int. J. Health Policy.* 4(3): 100–105.
- Iqbal, J., Naeem, A., and Ali, R. (2022).Bridging pharmacy practice gaps between developing and developed countries.*Asian J. Pharm. Clin. Res.* 15(2): 88–93.
- Javed, S., Khalid, H., and Shabbir, A. (2021).Exploring patient-pharmacist interactions in urban Pakistan. *Health Serv. Res. Rev.* 3(4): 69–74.
- Latif, F., and Khan, M. (2023). Community pharmacy accessibility and public health impact in low-income settings. *Pak. Med. J.* 18(1): 31–37.

- Malik, T., Shahid, M., and Saeed, K. (2023). The pharmacist crisis in Pakistan: A challenge for the healthcare system. *J. Pharm. Policy Pract.* 16(1): 13–19.
- Mukherjee, R., and Shah, D. (2022). Accreditation frameworks and error mitigation in pharmacy practice: A global review. *J. Pharm. Qual. Assur.* 14(2): 58–66.
- Nasir, N., Afzal, A., and Qureshi, I. (2023). Compliance of community pharmacies with licensing laws in metropolitan cities. *Pak. Health Reg. J.* 8(1): 20–26.
- Okafor, J., and Bassey, E. (2021). Counseling practices and drug misuse in Nigerian community pharmacies. *Niger. J. Pharm. Sci.* 17(2): 75–81.
- Rajput, M., and Mehta, A. (2020). Regulatory enforcement and its effect on patient satisfaction in Indian community pharmacies. *Int. J. Health Pol. Manag.* 5(1): 37–43.
- Rashid, H., and Bukhari, S. (2020). Enhancing patient access to pharmacy services in Pakistan: A pathway to better healthcare. *Pak. J. Pharm. Sci.* 33(6): 1421–1426.
- Raza, M., Younus, M., and Alam, S. (2021). Role of WHO declarations in shaping pharmacy practice in South Asia. *Global Pharm. Rev.* 6(3): 110–116.
- Siddique, R., Imtiaz, A., and Khawar, T. (2023). Medication safety and sociotechnical practices in Lahore's retail pharmacies. *J. Patient Saf. Pharm. Care.* 5(2): 77–83.
- Tariq, U., and Mehmood, N. (2020). Public perception of pharmacists in Pakistan: A survey-based analysis. *Pak. J. Soc. Sci.* 10(4): 55–60.
- Younas, S., and Rafiq, H. (2023). Unlicensed pharmacy practices in rural Pakistan: A threat to patient safety. *J. Rural Health Care.* 2(1): 12–18.