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Evaluation of patient safety culture in community pharmacies in Qatar

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Abstract

Introduction: Patient safety culture is a key contributor to medication safety globally. However, the perspective of pharmacists and other personnel in community pharmacy regarding patient safety culture may vary from one country to another.

Objective: The aim of this study was to determine the perspectives of community pharmacy personnel in Qatar about patient safety culture in community pharmacy setting.

Methods: A cross-sectional web-based survey utilising the Agency for Healthcare Research and Quality Community Pharmacy Survey on Patient Safety Culture was conducted. Participants included community pharmacy personnel practicing in Qatar. Both descriptive and inferential statistics were applied for data analyses, with statistical significance set at ≤ 0.05.

Results: Two hundred and forty participants completed the survey. A large proportion of the respondents (52.5%) reported an "excellent" overall rating of patient safety in their respective community pharmacies. Patient counselling and teamwork composites of patient safety culture were associated with the highest positive responses (95% and 93.7%, respectively). The "staffing, work pressure and pace" composite demonstrated the lowest positive response (50.6%) among the 11 composites. Inferential analysis revealed that working in chain pharmacies was significantly associated with positive responses related to "teamwork" ($P = .019$). Furthermore, working for more than 40 hours per week had a significant positive influence on the overall perceptions of patient safety ($P = .025$).

Conclusion: There was an overall positive perception towards patient safety culture among the surveyed community pharmacy personnel in Qatar. Superiority was observed with patient counselling and teamwork, while staffing, work pressure and pace were judged poorly, warranting further investigations and potential targeting for interventions.

1 | INTRODUCTION

Patient safety is a crucial pillar of healthcare quality and is a key determinant of a successful healthcare system. According to the World Health Organization (WHO), patient safety is defined as "the absence of avoidable harm to a patient during the provision of healthcare and reduction of risk of preventable harm associated with care to an adequate minimum".[1] Minimising patient harm in healthcare settings is a global challenge especially in hospital care.[2] Medication errors account for approximately 25% of all incidents related to medical errors,[3] with adverse drug events (ADEs) resulting in significant proportion of injuries and death.[4]

Patient safety culture takes into consideration factors that contribute to the enhancement of patient safety measures within a healthcare system, incorporating individual values, attitudes, perceptions, competencies and patterns of behaviour that determine the commitment to the proficiency of an organisation's safety management.[5,6] An organisation with a positive safety culture has characteristics such as communication based on mutual trust, prioritisation of safety and demonstration of confidence in the efficacy of preventive measures.[7] Achieving a culture of safety necessitates an understanding of the values, behaviours and norms regarding health and safety within an organisation; thus, it is crucial to unveil the underlying cultural factors present within the organisation so that safety culture can be transformed and developed.[8,9] Research has been done in healthcare to investigate organisational attributes that are believed to influence patient safety. Consequently, surveys and assessment tools have been designed and validated to evaluate safety culture that exists within healthcare organisations aiming to identify areas of strengths and weaknesses.[10-13]

It is evident that pharmacists and pharmacy services can substantially improve patient safety while reducing the consequences associated with medication errors.[14] There is a growing recognition of the importance of establishing a culture of patient safety. This requires an understanding of the values and beliefs about what is important in the organisation and what attitudes and behaviours related to patient safety are expected.[15] At a global level, international healthcare organisations such as the WHO and the Joint Commission International (JCI) advocate measuring patient safety culture within healthcare settings as an effective strategy for a sustainable safety improvement.[7] Therefore, this highlights the importance of patient safety culture assessment in general healthcare and diverse settings. At the regional level, a systematic review in the Arab world revealed 'response to error' requires improvement because of perception of a blame culture.[16] Locally in Qatar, studies assessing patient safety culture have been conducted in the acute and primary care settings utilising the Agency for Healthcare Research and Quality (AHRQ), Medical Office Survey on Patient Safety Culture (MOSPSC) and Hospital Survey on Patient Safety Culture (HSOPSC) respectively. These studies reported organisation safety initiatives and changes at the organisational levels are needed to improve patient safety culture in Qatar.[17,18]

What's known

- Studies have found that culture of patient safety could be improved by promoting the assessment of safety culture as there exists the culture of blame when medical errors occur.
- Safety culture has been assessed in community pharmacies globally and within the Arab region, but not in Qatar.

What's new

- Community pharmacy personnel in Qatar demonstrated positive response towards patient safety culture; but indicated that staffing, work pressure and pace could be improved.

Community pharmacies are known to be one of the patient's first point of contact with the healthcare system, where pharmacists play an essential role in providing patient care in a safe manner. Patient safety in community pharmacies is portrayed through the provision of optimal therapeutic agents in appropriate doses by pharmacists to meet the health-related needs of patients or customers.[19,20]

Community pharmacy staff get very busy as they work to address the varying needs of patients and customers in the pharmacy or over phone in a timely manner. As a result, there are high potentials for preventable medication errors to occur in the community pharmacy setting, where it is estimated that medication errors related to dispensing occur at the rate of approximately 1.7% in the United States (US).[21,22] Therefore, in October 2012, the US AHRQ developed and piloted the Community Pharmacy Survey on Patient Safety Culture, a survey instrument filled by pharmacy personnel to assess patient safety culture in community pharmacies.[23-26] The AHRQ pilot study reported that the main strengths observed in the patient safety culture within US community pharmacies were in the areas of patient counselling and communication openness, while the main weakness was related to staffing, work pressure and pace. Studies from other countries have assessed the patient safety culture within community pharmacy settings using the AHRQ survey.[27-30] The findings from the respective studies reported that teamwork and patient counselling were rated positively in community pharmacies, while staffing, work pressure and pace was the main area of weakness observed.[27-30]

In spite of considerable advances in healthcare technology and skills of pharmacists over the past decades, patients in the Arab world are still at risk of being exposed to harm from medication errors as a result of inadequate patient safety cultures within healthcare organisations.[16,17] In Qatar, most of the research and initiatives related to patient safety have occurred in hospital and primary healthcare settings. There is paucity of information and research on community pharmacies' involvement in issues related to patient safety such

as preventing medication errors. Since community pharmacists and their supporting personnel are in the frontline of ensuring patient safety in medication use, it is important to explore their perspectives of the culture of patient safety within their practice settings. Evaluating patient safety culture in community pharmacies grants organisations a platform to assess areas of strength and to identify areas of improvement as part of their quality improvement initiatives. Therefore, the objectives of this study were to: (a) determine the perspectives of community pharmacy personnel about patient safety culture in community pharmacies utilising the AHRQ survey in the state of Qatar and (b) identify areas of strengths and areas of improvement regarding patient safety culture in the community pharmacies surveyed.

2 | METHODS

2.1 | Study design and setting

An observational, cross-sectional, questionnaire-based study was conducted from March 2019 to November 2019 in community pharmacies in Qatar. The study population included registered pharmacists and other pharmacy personnel (eg registered pharmacy technicians, pharmacy assistants, pharmacy interns/externs) working in community pharmacies in Qatar during the study period. To ensure representative participation by pharmacy personnel, the three largest community pharmacy chains in Qatar (ie Wellcare, Kulud and Care n Cure companies) and one independent pharmacy (ie Ebn Sina) were approached to share the study with their pharmacy personnel.

2.2 | Sampling and survey administration

A list of licensed community pharmacists in Qatar is available from the licensing department (ie Qatar Council for Healthcare Practitioners) of the Ministry of Public Health. Based on a database of licensed community pharmacists in Qatar, and an estimate of other community pharmacy personnel, a minimum sample size of 250 was calculated with a 95% confidence interval and 5% margin of error (Raosoft® Software).[31] Assuming a response rate of approximately 20%, and the relatively small population of registered community pharmacists, the survey was distributed to all reachable pharmacy personnel via the available e-mail addresses in the database, as well as through the pharmacy coordinator of each of the pharmacies approached.

The web-based survey was administered using SurveyMonkey® online software (SurveyMonkey Inc). The survey link was distributed via email to all staff in various community pharmacies in Qatar. An online administration possesses the advantage of maintaining the anonymity of responses to reduce the risk of bias. Reminders were sent out to participants at different time points to increase the response rate during the 8-month study period.

2.3 | Survey instrument

The Community Pharmacy Survey on Patient Safety Culture developed by the AHRQ was used to collect the data for the study.[23] The survey which has 36 items that measure 11 composites of organisational culture to patient safety (Table 1) was first piloted in US in October 2012. In addition to the 11 composites, there are three questions related to documenting mistakes in the community pharmacy. The survey uses both 5-point agreement scale ("strongly disagree" to "strongly agree") and frequency scale ("never" to "always"). It also includes one question that asks participants to rate their pharmacy's overall rating on patient safety. Moreover, the survey response options include "does not apply", "don't know" and "other, please specify" options, which were added by the current study investigators to match the adaptations made to the survey.

No changes were made to the content of the questionnaire as the items of the 11 domains applied to Qatar and will allow comparison with similar studies globally. Additional demographic and professional characteristics questions were adapted and added to the instrument. The AHRQ survey tool was selected to evaluate the safety culture since the instrument was previously validated and possess good psychometric properties (reliability statistics based on the pilot data for the 11 respective composites ranged from Cronbach's alpha 0.68-0.89).[24] In addition, the use of a standardised, validated tool facilitates comparisons to be made across studies globally.

2.4 | Data analyses

The survey responses were exported from SurveyMonkey® to Statistical Package for Social Sciences (SPSS) version 25 (IBM).[32] All data were analysed using the SPSS. Negatively worded survey items were reverse scored such that a higher score (ie a score of 4 or 5 on a Likert scale) meant a more positive response to the question. Descriptive statistical analysis (frequencies and percentages) was conducted to report categorical variables. percent positive responses were calculated by combining the respective percentage responses of "strongly agree" and "agree" or "always" and "most of the time". percent neutral responses represented "neither agree nor disagree" or "sometimes" response categories. percent negative responses were calculated by combining "strongly disagree" and "disagree" or "never" and "rarely" response categories, depending on the response options used for any particular item. For negatively worded items, percent positive response is based on those who responded with "strongly disagree" or "disagree" or "never" or "rarely". For each of the 11 composites, a composite percent positive response was calculated as follows: (a) determine the percent positive response for each item in the composite, (b) add the calculated percent positive response for all the items in the composite and (c) divide the sum of the percent positive responses by the number of items in the composite. Additionally, inferential analyses using Chi-Square and Fisher's Exact tests were performed to determine the influence of demographic and professional characteristics on safety culture

TABLE 1 AHRQ community pharmacy patient safety culture composites

Composite	Definition
Communication about mistakes	Staff discuss mistakes that happen and talk about ways to prevent the mistakes.
Communication about prescriptions across shifts	Information about prescriptions is communicated well across shifts, and there are clear expectations and procedures for doing so
Communication openness	Staff freely speak up about patient safety concerns and feel comfortable asking questions, and staff suggestions are valued
Organizational learning – continuous improvement	The pharmacy tries to figure out what problems in the work process lead to mistakes and makes changes to keep mistakes from happening again
Overall perceptions of patient safety	There is a strong focus and emphasis on patient safety, and the pharmacy is good at preventing mistakes
Patient counseling	Patients are encouraged to talk to the pharmacist; pharmacists spend enough time talking to patients and tell them important information about new prescriptions
Physical space and environment	The pharmacy is well organized and free of clutter, and the pharmacy layout supports good workflow
Response to mistakes	The pharmacy examines why mistakes happen and helps staff learn from mistakes, and staff are treated fairly when they make mistakes
Staff training and skills	Staff get the training they need, new staff receive orientation, and staff have the skills they need to do their jobs well
Staffing, work pressure and pace	There are enough staff to handle the workload, staff do not feel rushed, staff can take breaks, and work can be completed accurately despite distractions
Teamwork	Staff treat each other with respect, work together as an effective team, and understand their roles and responsibilities

Note: AHRQ Community Pharmacy Survey on Patient Safety Culture (23).

composites and items with a statistical significance level of $P \leq .05$. Results are reported as percentage positive scores for each item and for the 11 composites of the survey instrument. Content analysis was conducted for qualitative responses generated from the open-ended free-text question.

2.5 | Ethical approval

Ethical approval was obtained from the Qatar University Institutional Review Board (approval reference number: QU-IRB 1013-E/19). The survey was anonymous and it did not capture any identifying information of the respondents. Accordingly, the survey responses were kept strictly confidential.

3 | RESULTS

3.1 | Demographic and professional characteristics of community pharmacy personnel

Of approximately 1000 pharmacy personnel who received the online link to the survey via e-mail, 240 respondents completed the survey (response rate 24%). The demographic and professional characteristics of the respondents are represented in Table 2. Notably, 87.5% of the respondents were pharmacists, while the remaining 12.5% included pharmacy technicians, pharmacy assistants and pharmacist interns. Most respondents (76.4%) were employees in chain pharmacies and around 44% had 6 to less than 12 years of pharmacy practice.

3.2 | Pharmacy personnel perceptions of patient safety culture

Responses from community pharmacy personnel regarding their perception of patient safety culture in their pharmacies are presented in Table 3, which displays the percentages of positive, neutral and negative responses for each of the survey items under their respective patient safety composites. In addition, Figure 1 illustrates the average percent positive responses of the 11 patient safety culture composites. The average percent positive response across the 11 composites was 80.9%. The "Patient Counseling" composite demonstrated the highest positive response (94.6%), followed by "Teamwork" and "Physical Space and Environment" composites that scored 91.4% and 89.6%, respectively. On the other hand, the "Staffing, Work pressure and Pace" composite demonstrated the lowest positive response (50.6%) among the 11 composites.

Furthermore, the perception of the pharmacy personnel towards documentation of mistakes was assessed through an additional composite, besides the 11 primary composites (Table 3). All three items (D1, D2 and D3) were rated positively with more than 60% positive

TABLE 2 Demographics and professional characteristics of surveyed pharmacy personnel (N = 240)

Variables	n (%)
Nationality[a]	
India	137 (58.1)
Egypt	42 (17.8)
Republic of the Philippines	38 (16.1)
Jordan	5 (2.1)
Sudan	6 (2.5)
Pakistan	2 (0.8)
Other	6 (2.5)
Gender[a]	
Male	131 (55.3)
Female	106 (44.2)
Country of professional pharmacy degree[a]	
India	137 (57.6)
Egypt	42 (17.6)
Republic of the Philippines	34 (14.3)
Jordan	5 (2.1)
Pakistan	4 (1.7)
Other	14 (5.8)
Year of pharmacy practice	
<6 mo	2 (0.8)
6 mo-<1 y	4 (1.7)
1-<3 y	23 (9.7)
3-<6 y	51 (21.5)
6-<12 y	104 (43.9)
≥12 y	43 (18.1)
Not applicable (non-pharmacist)	10 (4.2)
Years of pharmacy practice in Qatar[a]	
<6 months	12 (5.0)
6 mo-<1 y	17 (7.1)
1-<3 y	60 (25.2)
3-<6 y	69 (29.0)
6-<12 y	50 (20.8)
≥12 y	16 (6.7)
Not applicable (non-pharmacist)	14 (5.9)
Type of pharmacy[a]	
Chain	181 (76.4)
Independent	56 (23.6)
Hours worked per week[a]	
1-16 h/week	22 (9.3)
17-31 h/week	8 (3.4)
32-40 h/week	40 (16.9)
>40 h/week	167 (70.5)
Pharmacy position	
Pharmacist	210 (87.5)
Pharmacy technician	25 (10.4)
Pharmacy student intern/extern	1 (0.4)
Other	4 (1.7)

[a]Missing data from survey items not answered by respondents.

responses for each item. Finally, approximately half of the respondents (52.5%) rated overall rating for patient safety in their respective pharmacy as "Excellent" and about a third (31.7%) rated it as "Very good" (Figure 2).

Individual items with percent positive response less than 50% were B3 (46.1%), B9 (42.3%) and B16 (39.8%), in the "Staffing, Work Pressure and Pace" composite; C8 in the "Response to Mistakes" composite and C3 (46.2%) in the "Overall Perceptions of Patient Safety" composite.

3.3 | Assessment of patient safety culture according to pharmacies and pharmacy personnel characteristics

The percent positive response values for individual survey items were computed based on the respondents' professional position in the pharmacy (ie pharmacist vs non-pharmacist). This analysis was conducted to investigate whether the pharmacy position influenced the percentage of positive responses of the respective survey items. As illustrated in Table 4, the highest positive responses were demonstrated with the "Patient Counseling" composite (93%-96%) for both pharmacists and non-pharmacists, whereas the lowest positive responses were reported with the items of the "Response to Mistakes" composite (21%-88%). The proportion of pharmacists who felt that staff take adequate breaks during shifts was significantly higher than that of non-pharmacists (49.7% vs 27%; $P = .019$). Similarly, significantly less proportion of pharmacists felt that they were rushed when processing prescriptions compared with non-pharmacists (39.6% vs 66.7%; $P = .027$). No statistical significance was observed with the percent positive responses of the remaining composites ($P > .05$).

The influence of gender on percent positive responses was also investigated (Table 5). The proportion of female respondents who reported experiences of being rushed when processing prescriptions (B9) was significantly higher than male respondents (53.1% vs 33.3%; $P = .017$). However, a greater proportion of female respondents compared with male respondents reported that mistakes that reach the patient and could have caused harm but did not are adequately documented in their respective pharmacies (67.7% vs 65.7%; $P = .019$). The highest reported positive responses were related to the items corresponding to the "Teamwork" composite, where both male and female participants demonstrated percent positive responses higher than 89% for all three items (A2, A4 and A9).

Similarly, the association between the type of pharmacy and percent positive responses to respective survey items is shown in Table 6. The lowest documented positive responses were related to the survey items under the "Staff, Work Pressure, and Pace" composite, where percent positive responses ranged from 30% to 77.6% for both chain and independent pharmacy personnel. A significantly higher percentage of the personnel working in chain pharmacies compared with those working in independent pharmacies were more positive to numerous survey items including A1, A3, A9, B1,

TABLE 3 Item analysis of pharmacy personnel perception of patient safety culture (N = 240)

Composite items[a]	% Positive	% Neutral	% Negative
1. Physical space and environment			
A1. This pharmacy is well organized	92	6.2	1.8
A5. This pharmacy is free of clutter	87.1	9.3	1.3
A7. The physical layout of this pharmacy supports good workflow	89.8	9.3	0.9
2. Teamwork			
A2. Staff treat each other with respect	91.1	6.7	1.8
A4. Staff in this pharmacy clearly understand their roles and responsibilities	91.6	5.8	2.2
A9. Staff work together as an effective team	91.6	6.6	1.8
3. Staff training			
A3. Technicians in this pharmacy receive the training they need to do their jobs	84	4.9	4.4
A6. Staff in this pharmacy have the skills they need to do their jobs well	94.2	4	0.9
A8. Staff who are new to this pharmacy receive adequate orientation	90.2	7.6	2.2
A10. Staff get enough training from this pharmacy.	88.9	5.8	4.9
4. Communication openness			
B1. Staff ideas and suggestions are valued in this pharmacy	75.1	20.3	3.7
B5. Staff feel comfortable asking questions when they are unsure about something	90.7	6.5	2.8
B10. It is easy for staff to speak up to their supervisor/manager about patient safety concerns in this pharmacy	79.7	12.4	7.4
5. Patient counseling			
B2. We encourage patients to talk to pharmacists about their medications	94.5	5.1	0.5
B7. Our pharmacists spend enough time talking to patients about how to use their medications	96.3	2.3	0.9
B11. Our pharmacists tell patients important information about their new prescriptions	93.1	5.1	1.4
6. Staffing, work pressure, and pace			
B3. Staff take adequate breaks during shifts	46.1	25.3	28.6
B9. We feel rushed when processing prescriptions.[b]	42.3	35.3	20.9
B12. We have enough staff to handle the workload	74.2	17.5	8.3
B16. Interruptions/distractions in this pharmacy (from phone calls, faxes, customers, etc) make it difficult for staff to work accurately[b]	39.8	34.3	25
7. Communication about prescriptions across shifts			
B4. We have clear expectations about exchanging important prescription information across shifts	88.5	8.8	1.4
B6. We have standard procedures for communicating prescription information across shifts	87.6	7.4	3.7
B14. The status of problematic prescriptions is well communicated across shifts	88.5	9.2	0.9
8. Communication about mistakes			
B8. Staff in this pharmacy discuss mistake	80.9	14.9	3.7
B13. When patient safety issues occur in this pharmacy, staff discuss them	86.6	10.1	2.3
B15. In this pharmacy, we talk about ways to prevent mistakes from happening again	91.2	6	1.8
9. Response to mistakes			
C1. Staff are treated fairly when they make mistakes	71.6	14.2	11.4
C4. This pharmacy helps staff learn from their mistakes rather than punishing them	71.9	16.2	8.6

(Continues)

TABLE 3 (Continued)

Composite items[a]	% Positive	% Neutral	% Negative
C7. We look at staff actions and the way we do things to understand why mistakes happen in this pharmacy	86.7	9	1.9
C8. Staff feel like their mistakes are held against them[b]	24.9	30.6	37.3
10. Organizational Learning – Continuous Improvement			
C2. When a mistake happens, we try to figure out what problems in the work process led to the mistake	90.5	5.7	2.9
C5. When the same mistake keeps happening, we change the way we do things	88.1	7.6	1
C10. Mistakes have led to positive changes in this pharmacy	80	14.3	2.9
11. Overall Perceptions of Patient Safety			
C3. This pharmacy places more emphasis on sales than on patient safety[b]	46.2	20.7	31.7
C6. This pharmacy is good at preventing mistakes	86.7	9	2.9
C9. The way we do things in this pharmacy reflects a strong focus on patient safety.	90.4	6.7	1.9
Documenting mistakes			
D1. When a mistake reaches the patient and could cause harm but does not, how often is it documented?	67.1	9.2	13
D2. When a mistake reaches the patient but has no potential to harm the patient, how often is it documented?	62.8	14	14
D3. When a mistake that could have harmed the patient is corrected BEFORE the medication leaves the pharmacy, how often is it documented?	62.8	10.6	16.4

Note: Percent positive responses (PPR) are calculated by combining "strongly agree" and "agree" or "always" and "most of the time" response categories. Percent neutral responses represent "neither agree nor disagree" or "sometimes" response categories. Percent negative responses calculated by combining "strongly disagree" and "disagree" or "never" and "rarely" response categories. A1-A10, B1-B16 and C1-C8, correspond to AHRQ survey items (23).

[a]Percent responses for "Does Not Apply or Don't Know" response categories not documented with positive, neutral or negative percent responses.

[b]Negatively worded questions. For negatively worded items, PPR is based on those who responded "strongly disagree" or "disagree" or "never" or "rarely", depending on the response category used for that particular item.

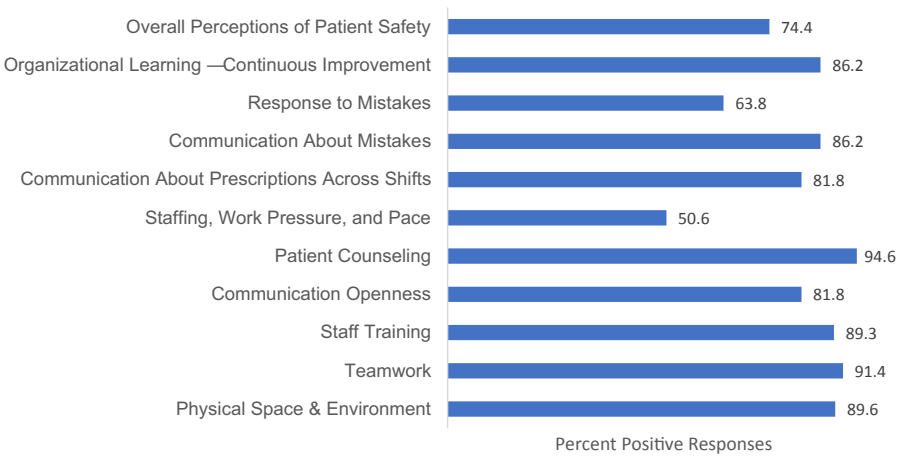

FIGURE 1 Percent Positive Responses on Patient Safety Culture Among Community Pharmacy Personnel in Qatar by Composites

B9, B12, C5 and D2 (Table 6). However, no statistical significance was observed with the responses corresponding to the remaining survey items ($P > .05$).

The influence of years of pharmacy practice in Qatar (<1 vs 1-5 vs ≥6 years) on positive response is presented in Table 7. A significant association was observed between the three ranges of pharmacy practice experience and the percent positive responses related to items A2, B3 and B4, where participants possessing 6 years or more of pharmacy practice in Qatar reported that staff treat each other with respect, adequate breaks are taken during shifts, staff have clear expectations about exchanging important prescription information across shifts and the way things are done

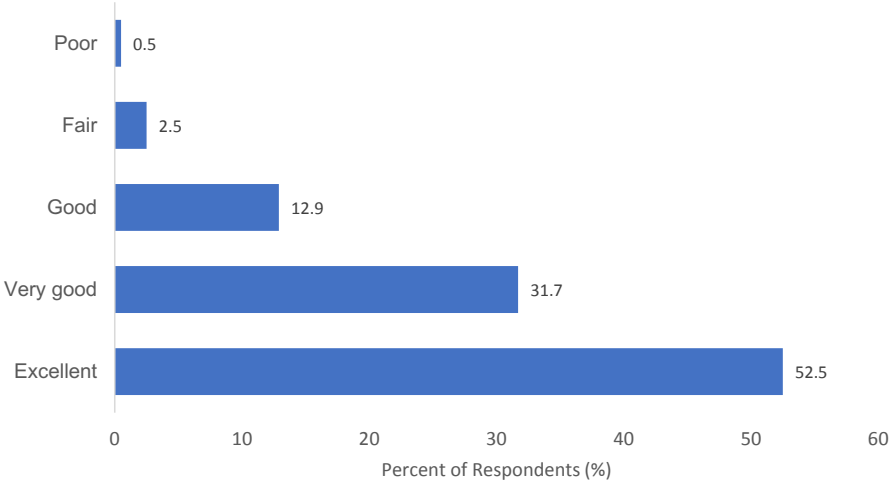

FIGURE 2 Overall Rating of Patient Safety Culture Among Community Pharmacy Personnel in Qatar (N = 240)

in their respective pharmacies reflects a strong focus on patient safety.

In addition, an analysis was conducted to investigate the effect of weekly working hours on positive response to the respective survey items (Table 8). Pharmacy personnel working for more than 40 hours per week reported significantly higher positive responses to items B4, C5 and C7. Consistent with other factors influencing perceptions on patient safety culture, such as staff position, type of pharmacy and gender, the lowest positive responses were reported for "Staffing, Work Pressure, and Pace" composite (scores ranged from 39% to 76%). More specifically, item B16, where 39.6% vs 40.4% positive responses were documented for pharmacy personnel working up to 40 hours per week and those working more than 40 hours per week, respectively, although the difference did not reach statistical significance ($P > .05$). The remaining items corresponding to the other composites were associated with relatively higher percent positive responses for personnel working above 40 hours per week, although the differences did not reach statistical significance ($P > .05$).

3.4 | Open-ended responses on perceptions of pharmacy personnel towards patient safety culture

At the completion of the survey, respondents were given the opportunity, through an open-ended free-text question, to provide any comments or feedback regarding perceptions of patient safety culture in their respective pharmacies. Through an examination and content analysis of the open-ended responses, 66 participants provided a wide array of feedback regarding patient safety culture in community pharmacy. Since this is not a formal qualitative study, we identified five most commonly discussed and judged to be important facilitators and barriers of medication safety surrounding the following: need for double-checking prescriptions, existence of error-reporting and documentation system, need for standardisation of track and trace system for medication errors and inadequate pharmacy workforce, especially during peak hours. A majority of these respondents reported positive and constructive comments stating that the process of "double-checking" is one of the key contributors to patient safety within their respective pharmacies. Similarly, numerous respondents mentioned the availability of an "error-reporting system" or "electronically-generated error documentation" in their community pharmacies, used in documenting the occurrence of any medication errors during each shift, and which are subsequently discussed in weekly discussions and meetings. Other respondents indicated the necessity of introducing standardised strategies for all community pharmacies in order to track and document errors in an efficient manner, thus maximising the precision of error detection and prevention. Furthermore, several respondents stated their opinions regarding insufficient number of staff during the peak work hours of the day, indicating that the patient or customer volume in their respective community pharmacy settings affects the accuracy of dispensing, counselling and time spent with each patient.

4 | DISCUSSION

To the knowledge of the authors, this study was the first in Qatar to explore the perceptions of personnel on patient safety culture in community pharmacy practice. The results of this study revealed that community pharmacy personnel in Qatar have an overall positive response toward the patient safety culture practiced in their respective pharmacies. Around 53% and 32% of respondents provided an overall rating of patient safety culture of "Excellent" and "Very good", respectively, indicating that community pharmacy companies in Qatar have created a positive culture of patient safety within their community pharmacies.

In addition, the findings showed significant variability in the percent positive response values across the 11 composites of patient safety, with "Staffing, Work Pressure, and Pace" and "Response to Mistakes" composites, being the only two composites with percent positive response rates below 70%, while the highest response was seen with the "Patient Counseling" composite. This implies that community pharmacy personnel consider counselling as an essential component of patient safety. There is evidence in the literature that patient counselling grants pharmacists the opportunity to identify

TABLE 4 Percent positive responses (PPR) for survey items in 11 composites according to pharmacy position

Composite items	Percent positive responses (%)		*P*-value[a]
	Pharmacist	Non-pharmacist	
1. Physical space and environment			
A1. This pharmacy is well organized	91.8	92.1	.993
A5. This pharmacy is free of clutter	88.2	95.5	.949
A7. The physical layout of this pharmacy supports good workflow	89.3	92.1	.997
2. Teamwork			
A2. Staff treat each other with respect	91.8	83.8	.869
A4. Staff in this pharmacy clearly understand their roles and responsibilities	95.5	86.5	.855
A9. Staff work together as an effective team	91.3	92.1	.609
3. Staff training			
A3. Technicians in this pharmacy receive the training they need to do their jobs	82.7	91.9	.898
A6. Staff in this pharmacy have the skills they need to do their jobs well	93.9	95.5	.992
A8. Staff who are new to this pharmacy receive adequate orientation	89.2	95.5	.898
A10. Staff get enough training from this pharmacy	88.8	86.4	.214
4. Communication openness			
B1. Staff ideas and suggestions are valued in this pharmacy	74.9	71.1	.952
B5. Staff feel comfortable asking questions when they are unsure about something	90.3	91.9	.984
B10. It is easy for staff to speak up to their supervisor/manager about patient safety concerns in this pharmacy	78.6	88.3	.967
5. Patient counseling			
B2. We encourage patients to talk to pharmacists about their medications.	93.6	94.4	.94
B7. Our pharmacists spend enough time talking to patients about how to use their medications	95.7	96	.999
B11. Our pharmacists tell patients important information about their new prescriptions	92.5	92.9	.998
6. Staffing, work pressure, and pace			
B3. Staff take adequate breaks during shifts	49.7	27	.019*
B9. We feel rushed when processing prescriptions[b]	39.6	66.7	.027*
B12. We have enough staff to handle the workload	74.9	72.1	.997
B16. Interruptions/distractions in this pharmacy (from phone calls, faxes, customers, etc) make it difficult for staff to work accurately [b]	40.6	38.8	.099
7. Communication about prescriptions across shifts			
B4. We have clear expectations about exchanging important prescription information across shifts	89.8	80.2	.704
B6. We have standard procedures for communicating prescription information across shifts	86.6	91.9	.995
B14. The status of problematic prescriptions is well communicated across shifts	87.7	92.9	.522
8. Communication about mistakes			
B8. Staff in this pharmacy discuss mistakes	80	87.4	.956
B13. When patient safety issues occur in this pharmacy, staff discuss them	86.1	87.4	.89
B15. In this pharmacy, we talk about ways to prevent mistakes from happening again	91.4	88.3	.971
9. Response to mistakes			
C1. Staff are treated fairly when they make mistakes	73.6	64	.712

(Continues)

TABLE 4 (Continued)

Composite items	Percent positive responses (%)		
	Pharmacist	Non-pharmacist	*P*-value[a]
C4. This pharmacy helps staff learn from their mistakes rather than punishing them	72.4	68.5	.925
C7. We look at staff actions and the way we do things to understand why mistakes happen in this pharmacy	87.8	75.7	.198
C8. Staff feel like their mistakes are held against them[b]	26	21.4	.307
10. Organizational learning – continuous improvement			
C2. When a mistake happens, we try to figure out what problems in the work process led to the mistake	90.1	91.6	.967
C5. When the same mistake keeps happening, we change the way we do things	87.8	88.3	.907
C10. Mistakes have led to positive changes in this pharmacy	79.1	91.6	.867
11. Overall perceptions of patient safety			
C3. This pharmacy places more emphasis on sales than on patient safety[b]	46.1	51.1	.794
C6. This pharmacy is good at preventing mistakes	85.6	92.9	.821
C9. The way we do things in this pharmacy reflects a strong focus on patient safety	88.9	90.2	.814
Documenting mistakes			
D1. When a mistake reaches the patient and could cause harm but does not, how often is it documented?	65.4	74.1	.709
D2. When a mistake reaches the patient but has no potential to harm the patient, how often is it documented?	60.9	69.5	.556
D3. When a mistake that could have harmed the patient is corrected BEFORE the medication leaves the pharmacy, how often is it documented?	59.2	82.5	.28

[a]Statistical analysis using Chi-square test.

[b]Negatively worded question.

*Statistical significance ($P < .05$).

and resolve drug-related problems.[19] Moreover, the score reflects the dedication of pharmacy personnel to patient engagement and the willingness to spend enough time with patients to discuss the numerous over-the-counter medications in Qatar, as well as prescription medications. Notably, patient counselling in pharmacies is an integral part of pharmacy practice in Qatar because many users of community pharmacy consult pharmacy personnel when they visit these pharmacies. These findings are consistent with the findings from the AHRQ Database Report as well as a recent study conducted in US, where both studies reported "Patient Counseling" composite as having achieved the highest percent positive response among all 11 composites (92% and 91% respectively).[25,26] Similarly, results from the current study reported that the "Teamwork" and "Physical Space and Environment" composites also demonstrated relatively high percent positive response scores (93.7% and 92.7% respectively). These high scores reflect the important contribution of teamwork to patient safety within community pharmacy practice, and furthermore, it indicates that staff treat each other with respect, work together as an effective team and understand their respective roles and responsibilities. The positive response to "Physical Space and Environment" composite further reveals that the pharmacy personnel believe that their respective pharmacies are well organised, free of clutter and the layout supports good workflow. In other words, a well-organised and laid out pharmacy that is clutter free improves patient safety.

Conversely, the lowest percent positive response score was reported with the "Staffing, Work Pressure, and Pace" composite (50.6%), which is consistent to the findings of similar studies conducted in the US, Kuwait, Malaysia, China and Taiwan that have reported "Staffing, Work Pressure, and Pace" to be the lowest scoring composite.[24-29] Interestingly, the consistency in reporting the lowest percent positive response score for this composite in community pharmacies located in Asia and North America highlights a critical deficit in patient safety within healthcare organisations that run community pharmacies. Participants in the current study reported that staff were not taking adequate breaks during their shifts (percent positive response = 46.1%), felt that they were rushed when processing prescriptions (percent positive response = 42.3%) and most importantly, indicated that interruptions in their respective pharmacies made it difficult for staff to work accurately (percent positive response = 39.8%). The activities of community pharmacists in Qatar are based on traditional product-oriented pharmacy practice, however, pharmacists dispense several classes of non-controlled medications (eg antihypertensives, antidiabetes and

TABLE 5 Percent Positive Responses (PPR) for survey items in 11 composites according to gender

Composite Items	Percent Positive Responses (%)		
	Male	Female	*P*-value[a]
1. Physical space and environment			
A1. This pharmacy is well organized	93.4	90.1	.639
A5. This pharmacy is free of clutter.	86.9	87.1	.595
A7. The physical layout of this pharmacy supports good workflow	91	88.2	.795
2. Teamwork			
A2. Staff treat each other with respect	92.6	89.2	.236
A4. Staff in this pharmacy clearly understand their roles and responsibilities	90.2	93.1	.75
A9. Staff work together as an effective team	92.6	90.2	.804
3. Staff training			
A3. Technicians in this pharmacy receive the training they need to do their jobs	83.5	84.3	.717
A6. Staff in this pharmacy have the skills they need to do their jobs well	94.3	94.1	.174
A8. Staff who are new to this pharmacy receive adequate orientation.	90	90.2	.961
A10. Staff get enough training from this pharmacy	89.3	88.2	.752
4. Communication openness			
B1. Staff ideas and suggestions are valued in this pharmacy	77.6	71.4	.308
B5. Staff feel comfortable asking questions when they are unsure about something	88.8	92.8	.413
B10. It is easy for staff to speak up to their supervisor/manager about patient safety concerns in this pharmacy	76.7	82.7	.441
5. Patient counseling			
B2. We encourage patients to talk to pharmacists about their medications	94	94.9	.654
B7. Our pharmacists spend enough time talking to patients about how to use their medications	95.7	96.9	.817
B11. Our pharmacists tell patients important information about their new prescriptions	91.4	94.9	.327
6. Staffing, work pressure, and pace			
B3. Staff take adequate breaks during shifts	45.7	46.9	.529
B9. We feel rushed when processing prescriptions[b]	33.3	53.1	.017*
B12. We have enough staff to handle the workload	79.3	67.3	.138
B16. Interruptions/distractions in this pharmacy (from phone calls, faxes, customers, etc) make it difficult for staff to work accurately[b]	37.4	41.8	.925
7. Communication about prescriptions across shifts			
B4. We have clear expectations about exchanging important prescription information across shifts	89.7	86.7	.771
B6. We have standard procedures for communicating prescription information across shifts	85.3	89.8	.478
B14. The status of problematic prescriptions is well communicated across shifts	87.1	90.8	.538
8. Communication about mistakes			
B8. Staff in this pharmacy discuss mistakes	80.2	81.3	.558
B13. When patient safety issues occur in this pharmacy, staff discuss them	82.8	91.8	.183
B15. In this pharmacy, we talk about ways to prevent mistakes from happening again	91.4	91.8	.614
9. Response to mistakes			
C1. Staff are treated fairly when they make mistakes	72.7	71.4	.256
C4. This pharmacy helps staff learn from their mistakes rather than punishing them	72.5	71.4	.35

(Continues)

TABLE 5 (Continued)

Composite Items	Percent Positive Responses (%)		
	Male	Female	*P*-value[a]
C7. We look at staff actions and the way we do things to understand why mistakes happen in this pharmacy	89.9	82.7	.346
C8. Staff feel like their mistakes are held against them[b]	22.2	27.6	.108
10. Organizational learning – continuous improvement			
C2. When a mistake happens, we try to figure out what problems in the work process led to the mistake	90.8	89.8	.996
C5. When the same mistake keeps happening, we change the way we do things	91.7	83.7	.17
C10. Mistakes have led to positive changes in this pharmacy	83.5	76.5	.5
11. Overall perceptions of patient safety			
C3. This pharmacy places more emphasis on sales than on patient safety[b]	38.9	53.6	.086
C6. This pharmacy is good at preventing mistakes	87.2	85.7	.165
C9. The way we do things in this pharmacy reflects a strong focus on patient safety	88.8	91.8	.433
Documenting mistakes			
D1. When a mistake reaches the patient and could cause harm but does not, how often is it documented?	65.7	67.7	.019*
D2. When a mistake reaches the patient but has no potential to harm the patient, how often is it documented?	62	62.5	.416
D3. When a mistake that could have harmed the patient is corrected BEFORE the medication leaves the pharmacy, how often is it documented?	65.7	60.4	.305

[a]Statistical analysis using Chi-square test.

[b]Negatively worded question.

*Statistical significance ($P < .05$).

antidyslipidemic agents) with or without a physician's prescription. Patients and customers present to the community pharmacy with their health needs and the pharmacists provide recommendations or products they need without creating a healthcare record or medical profile of the patient. The significantly low percent positive response for the three items of the composite clearly convey pharmacists are overwhelmed by the workload. The low score for this composite is particularly concerning because inadequate pharmacy staff coverage can severely limit pharmacists' ability to safely dispense prescriptions, thus increasing the risk of harming patients. In addition, as reported in the literature, the lack of precise concentration during the dispensing or counselling process is one of the major contributing factors to medication errors.[7,8] In addition, recent studies have revealed that high workload, lack of adequate breaks and fatigue are key contributors to medication errors.[15] Furthermore, previous evidence have shown that high workload in community pharmacies was negatively associated with pharmacist-provided drug therapy services, as well as increases the risk of dispensing medications with potentially clinically relevant drug–drug interactions.[15,16] Therefore, considering all these drawbacks, it is important to allocate adequate number of pharmacy staff for the entire working shift, and making provisions for all staff in the pharmacy to have the breaks they are entitled to during each working shift. These measures will help reduce medication errors in busy community pharmacies and enhance the culture of patient safety in this practice setting.

The results from the inferential analyses revealed that pharmacists reported significantly higher positive responses relating to getting adequate breaks during shifts compared with non-pharmacists (49.7% vs 27%). The most likely reason to having this significant difference is that most of the non-pharmacist personnel work for 12 hours (overlap of 2 shifts), while pharmacists usually work 8-hour shifts. On the other hand, when compared with pharmacists, the non-pharmacists reported significantly higher positive responses (39.6% vs 66.7%) when responding to the composite item related to feeling rushed when processing prescriptions. Also, as part of good customer service, the pharmacist is expected to be efficient in providing timely service to all waiting patients, especially those who do not have the patience to wait, hence the feeling of getting rushed when processing prescriptions. Furthermore, female respondents were found to have a significant association with experiences of being more rushed when processing prescriptions, compared with male participants (33.3% vs 53.1%). It is unclear to the authors the reason for this finding related to the female pharmacists. Nevertheless, pharmacies have to put in place measures such as increasing the minimum waiting time of customers for prescriptions so that pharmacists do not feel pressured when processing prescriptions or communicating with them. Similarly, two percent more females (67.7% vs 65.7%) pharmacists reported there was inadequate documentation of harmless mistakes that reached the patient, and this was statistically significant. The percent positive response of

TABLE 6 Percent positive responses (PPR) for survey items in 11 composites according to pharmacy type

Composite items	Percent positive responses (%)		*P*-value[a]
	Chain	Independent	
1. Physical space and environment			
A1. This pharmacy is well organized	94.8	82.4	.016*
A5. This pharmacy is free of clutter	87.3	86.3	.558
A7. The physical layout of this pharmacy supports good workflow	90.8	86.5	.384
2. Teamwork			
A2. Staff treat each other with respect	90.1	94.2	.643
A4. Staff in this pharmacy clearly understand their roles and responsibilities	93.1	86.5	.222
A9. Staff work together as an effective team	93.6	84.6	.010*
3. Staff training			
A3. Technicians in this pharmacy receive the training they need to do their jobs	87.9	71.2	.025*
A6. Staff in this pharmacy have the skills they need to do their jobs well	94.2	94.2	.63
A8. Staff who are new to this pharmacy receive adequate orientation	90.1	90.2	.078
A10. Staff get enough training from this pharmacy	90.2	84.6	.317
4. Communication openness			
B1. Staff ideas and suggestions are valued in this pharmacy	78.8	62	.043*
B5. Staff feel comfortable asking questions when they are unsure about something	91.5	88	.293
B10. It is easy for staff to speak up to their supervisor/manager about patient safety concerns in this pharmacy	81.2	74	.479
5. Patient counseling			
B2. We encourage patients to talk to pharmacists about their medications	95.2	92	.496
B7. Our pharmacists spend enough time talking to patients about how to use their medications	96.4	96	.268
B11. Our pharmacists tell patients important information about their new prescriptions	93.9	90	.149
6. Staffing, work pressure, and pace			
B3. Staff take adequate breaks during shifts	43	56	.271
B9. We feel rushed when processing prescriptions[b]	44.8	34	.012*
B12. We have enough staff to handle the workload	77.6	62	.013*
B16. Interruptions/distractions in this pharmacy (from phone calls, faxes, customers, etc) make it difficult for staff to work accurately[b]	42.7	30	.304
7. Communication about prescriptions across shifts			
B4. We have clear expectations about exchanging important prescription information across shifts	90.9	80	.039
B6. We have standard procedures for communicating prescription information across shifts	89.1	82	.277
B14. The status of problematic prescriptions is well communicated across shifts	90.3	82	.421
8. Communication about mistakes			
B8. Staff in this pharmacy discuss mistakes	81	80	.279
B13. When patient safety issues occur in this pharmacy, staff discuss them	87.3	84	.083
B15. In this pharmacy, we talk about ways to prevent mistakes from happening again	93.3	84	.216
9. Response to mistakes			
C1. Staff are treated fairly when they make mistakes	70.2	77.1	.64
C4. This pharmacy helps staff learn from their mistakes rather than punishing them	71.3	77.1	.066

(Continues)

TABLE 6 (Continued)

Composite items	Percent positive responses (%)		
	Chain	Independent	*P*-value[a]
C7. We look at staff actions and the way we do things to understand why mistakes happen in this pharmacy	88.8	79.2	.171
C8. Staff feel like their mistakes are held against them. [b]	25.2	25	.483
10. Organizational learning – continuous improvement			
C2. When a mistake happens, we try to figure out what problems in the work process led to the mistake	90.6	89.6	.693
C5. When the same mistake keeps happening, we change the way we do things	91.3	77.1	.044*
C10. Mistakes have led to positive changes in this pharmacy	81.3	77.1	.788
11. Overall perceptions of patient safety			
C3. This pharmacy places more emphasis on sales than on patient safety[b]	48.1	39.6	.592
C6. This pharmacy is good at preventing mistakes	88.8	79.2	.399
C9. The way we do things in this pharmacy reflects a strong focus on patient safety	90.5	89.6	.841
Documenting mistakes			
D1. When a mistake reaches the patient and could cause harm but does not, how often is it documented?	68.8	60.4	.056
D2. When a mistake reaches the patient but has no potential to harm the patient, how often is it documented?	65	54.2	.016*
D3. When a mistake that could have harmed the patient is corrected BEFORE the medication leaves the pharmacy, how often is it documented?	66.2	50	.105

[a]Statistical analysis using Chi-square test.

[b]Negatively worded question.

*Statistical significance ($P < .05$).

this item on documenting mistakes is substantially lower than what was reported in the 2019 AHRQ survey report (94%).[25] One possible reason for this difference is that community pharmacies in Qatar do not have prescription processing systems with patient profiles, unlike the US where all prescriptions are processed and accessed for errors under the profile of the patient. In addition, results indicated that working in chain pharmacies was significantly associated with high positive responses relating to the pharmacy being well organised, staff working together as an effective team, staff ideas and suggestions being valued in the pharmacy, feeling rushed when processing prescriptions and having enough staff to handle the workload. Accordingly, this may be because of the presence of more personnel (ie pharmacy technicians and/or pharmacy aides) helping with the workload in chain pharmacies than in independent pharmacies.[19]

The respondents with six or more years of practice experience in Qatar significantly responded more positively to survey items, which highlighted staff treating each other with respect, staff taking adequate breaks during shifts and staff having clear expectations about exchanging important prescription information across shifts compared with those who had worked for less than one year. These findings may be related to the fact that greater work experience grants pharmacy personnel the ability to efficiently manage patient safety-related issues, as well as adapt to the immense workload adequately, than those with less experience.[19] Recent literature has reported that longer years of experience are related to the pharmacy personnel's increased awareness of the pitfalls within the pharmacy workflow and thus, would subsequently prevent their occurrence in an efficient manner, which in turn would reduce the risk of resulting medication errors.[25] Furthermore, pharmacy personnel working more than 40 hours per week reported significantly higher positive responses corresponding to the presence of enough staff to handle workload as well as revealing that their respective pharmacies are good at preventing mistakes, than those working 40 hours or less per week. These findings may be related to the fact that pharmacists who work longer hours may be covering two shifts in the same day, hence are provided with enough supporting staff over both shifts, thereby indicating that more staff is present to handle the workload.[22] The issue of community pharmacies placing more emphasis on sales than on patient safety (C3) had low percent of positive response irrespective of gender, pharmacy type, years of pharmacy practice in Qatar or number of hours worked per week. It is risky in any practice setting for sale of products (eg prescription medications, OTC medications, medical devices) and profit to be given priority in lieu of patient safety. In such circumstances, measures need to be taken and interventions instituted to change mind-set of owners of business and practitioners.[33,34] In Qatar, the community pharmacies are not divided into front end and the pharmacy area. As a result, it is an additional responsibility on the pharmacist and the pharmacy technician/aide to boost sales of non-prescription items

TABLE 7 Percent Positive Responses (PPR) for Survey Items in 11 Composites According to Years of Pharmacy Practice in Qatar

	Percent positive responses (%)			
Composite items	**<1 y**	**1-<6 y**	**≥6 y**	***P*-value[a]**
1. Physical space and environment				
A1. This pharmacy is well organized	85.9	93.5	90.6	.424
A5. This pharmacy is free of clutter	77.5	88.5	90.5	.36
A7. The physical layout of this pharmacy supports good workflow	92.5	89.4	85.4	.726
2. Teamwork				
A2. Staff treat each other with respect	85.7	92.7	95.8	.046*
A4. Staff in this pharmacy clearly understand their roles and responsibilities	85.9	92.7	94.7	.212
A9. Staff work together as an effective team	82.5	92.5	96.8	.067
3. Staff training				
A3. Technicians in this pharmacy receive the training they need to do their jobs	89.2	85.2	76.9	.722
A6. Staff in this pharmacy have the skills they need to do their jobs well	89.2	94.4	94.8	.55
A8. Staff who are new to this pharmacy receive adequate orientation	86.7	91	90.5	.146
A10. Staff get enough training from this pharmacy	82.5	90.2	93.6	.549
4. Communication openness				
B1. Staff ideas and suggestions are valued in this pharmacy	68.8	78	71.9	.341
B5. Staff feel comfortable asking questions when they are unsure about something	85	89	92.9	.535
B10. It is easy for staff to speak up to their supervisor/manager about patient safety concerns in this pharmacy	69.7	81.3	82.6	.89
5. Patient counseling				
B2. We encourage patients to talk to pharmacists about their medications	90	94.9	94.2	.385
B7. Our pharmacists spend enough time talking to patients about how to use their medications	93.4	96.7	95.3	.776
B11. Our pharmacists tell patients important information about their new prescriptions	96.7	91.2	96.6	.977
6. Staffing, work pressure, and pace				
B3. Staff take adequate breaks during shifts	31.6	48.2	57	.010*
B9. We feel rushed when processing prescriptions[b]	73	73.8	34.3	.163
B12. We have enough staff to handle the workload	67.3	76.2	75.5	.541
B16. Interruptions/distractions in this pharmacy (from phone calls, faxes, customers, etc) make it difficult for staff to work accurately[b]	28	48.3	29.2	.125
7. Communication about prescriptions across shifts				
B4. We have clear expectations about exchanging important prescription information across shifts	75.5	92.4	87.1	.003*
B6. We have standard procedures for communicating prescription information across shifts	82.1	88.2	84.8	.761
B14. The status of problematic prescriptions is well communicated across shifts	88.8	84.8	91.7	.465
8. Communication about mistakes				
B8. Staff in this pharmacy discuss mistakes	68.9	82.3	83.8	.394

(Continues)

TABLE 7 (Continued)

Composite items	Percent positive responses (%)			*P*-value[a]
	<1 y	1-<6 y	≥6 y	
B13. When patient safety issues occur in this pharmacy, staff discuss them	84.3	86.4	84.8	.606
B15. In this pharmacy, we talk about ways to prevent mistakes from happening again	82.1	90.7	92.9	.569
9. Response to mistakes				
C1. Staff are treated fairly when they make mistakes	67.6	74.6	75.4	.538
C4. This pharmacy helps staff learn from their mistakes rather than punishing them	63	73.8	76.2	.513
C7. We look at staff actions and the way we do things to understand why mistakes happen in this pharmacy	85.5	85.9	89.3	.59
C8. Staff feel like their mistakes are held against them[b]	15.3	24.5	32.2	.475
10. Organizational learning – continuous improvement				
C2. When a mistake happens, we try to figure out what problems in the work process led to the mistake	92.9	91.3	90.7	.657
C5. When the same mistake keeps happening, we change the way we do things	90.9	86.9	85.8	.637
C10. Mistakes have led to positive changes in this pharmacy	80.2	81.7	80	.642
11. Overall perceptions of patient safety				
C3. This pharmacy places more emphasis on sales than on patient safety[b]	44.2	46	46.5	.305
C6. This pharmacy is good at preventing mistakes	80.9	88.6	81	.474
C9. The way we do things in this pharmacy reflects a strong focus on patient safety	75.7	93	84.9	.275
Documenting mistakes				
D1. When a mistake reaches the patient and could cause harm but does not, how often is it documented?	79.3	64.6	63.1	.959
D2. When a mistake reaches the patient but has no potential to harm the patient, how often is it documented?	73.6	60.2	61.9	.402
D3. When a mistake that could have harmed the patient is corrected BEFORE the medication leaves the pharmacy, how often is it documented?	67.2	63.7	51.2	.672

[a]Statistical analysis using Chi-square test.

[b] Negatively worded question.

*Statistical significance ($P < .05$).

and cosmetics, which are important revenue generating streams for the pharmacy.

Finally, regarding the open-ended responses provided by the respondents, numerous beneficial suggestions can be derived from their comments. Respondents' comments highlighted the effectiveness of safety measures such as double checking. Also, respondents commented that safety culture could be enhanced in the community pharmacies by having an error reporting system in the state of Qatar. This highlights the significance of reporting errors in the community pharmacy setting, further suggesting that the implementation of strategies to improve the documentation of errors would be highly beneficial.[20]

The main strengths of this study included the utilisation of a standardised and validated instrument, specifically designed for the community pharmacy settings, facilitating comparisons to be made across pharmacies and regions. Nevertheless, this study presented with a number of limitations. Notably, sampling was based on convenience because the survey was sent to all community pharmacists that were accessible. In addition, the survey link was made available for a period of nine months; however, the sample size was still slightly lower than estimated. Hence, the non-probability sampling and lower sample size may limit the external validity and generalisability of the study findings. Furthermore, previous studies that have conducted similar assessments have explored patient safety culture based on pharmacy companies, allowing comparisons to be made between pharmacy branch companies. However, this strategy was not implemented in the current study because participants may be reluctant to respond to the survey since they would be required to

TABLE 8 Percent positive responses (PPR) for survey items in 11 composites according to hours worked per week

Composite items	Percent positive responses (%)		
	≤40 h	>40 h	*P*-value[a]
1. Physical space and environment			
A1. This pharmacy is well organized	88.1	93.7	.086
A5. This pharmacy is free of clutter	83	89.2	.096
A7. The physical layout of this pharmacy supports good workflow	89.1	89.3	.875
2. Teamwork			
A2. Staff treat each other with respect	90.6	92.5	.794
A4. Staff in this pharmacy clearly understand their roles and responsibilities	88.2	92.5	.269
A9. Staff work together as an effective team	92.4	91.8	.733
3. Staff training			
A3. Technicians in this pharmacy receive the training they need to do their jobs	83.9	84.2	.795
A6. Staff in this pharmacy have the skills they need to do their jobs well	95	93.1	.889
A8. Staff who are new to this pharmacy receive adequate orientation	84.9	90.4	.303
A10. Staff get enough training from this pharmacy	85.7	89.9	.814
4. Communication openness			
B1. Staff ideas and suggestions are valued in this pharmacy	68.2	76.8	.92
B5. Staff feel comfortable asking questions when they are unsure about something	84.6	92	.453
B10. It is easy for staff to speak up to their supervisor/manager about patient safety concerns in this pharmacy	76.7	80.8	.834
5. Patient counseling			
B2. We encourage patients to talk to pharmacists about their medications	91.6	94.7	.837
B7. Our pharmacists spend enough time talking to patients about how to use their medications	96.3	97.4	.412
B11. Our pharmacists tell patients important information about their new prescriptions	90.3	94.7	.263
6. Staffing, work pressure, and pace			
B3. Staff take adequate breaks during shifts	55.5	42.4	.072
B9. We feel rushed when processing prescriptions[b]	48.7	40.7	.574
B12. We have enough staff to handle the workload	67.3	76.2	.884
B16. Interruptions/distractions in this pharmacy (from phone calls, faxes, customers, etc) make it difficult for staff to work accurately[b]	39.6	40.4	.783
7. Communication about prescriptions across shifts			
B4. We have clear expectations about exchanging important prescription information across shifts	78.6	90.7	.046*
B6. We have standard procedures for communicating prescription information across shifts	84.6	87.4	.347
B14. The status of problematic prescriptions is well communicated across shifts	88.8	88.1	.511
8. Communication about mistakes			
B8. Staff in this pharmacy discuss mistakes	83.2	80	.617
B13. When patient safety issues occur in this pharmacy, staff discuss them	84.2	88.7	.679
B15. In this pharmacy, we talk about ways to prevent mistakes from happening again	83.7	94	.194
9. Response to mistakes			
C1. Staff are treated fairly when they make mistakes	78.9	69.9	.757
C4. This pharmacy helps staff learn from their mistakes rather than punishing them	77.3	71	.968

(Continues)

TABLE 8 (Continued)

Composite items	Percent positive responses (%) ≤40 h	>40 h	*P*-value[a]
C7. We look at staff actions and the way we do things to understand why mistakes happen in this pharmacy	75	89	.025*
C8. Staff feel like their mistakes are held against them[b]	15.1	28.3	.188
10. Organizational learning – continuous improvement			
C2. When a mistake happens, we try to figure out what problems in the work process led to the mistake	88.5	91.8	.57
C5. When the same mistake keeps happening, we change the way we do things	77.9	89	.010*
C10. Mistakes have led to positive changes in this pharmacy	76.8	80.1	.699
11. Overall perceptions of patient safety			
C3. This pharmacy places more emphasis on sales than on patient safety[b]	42.5	47.2	.724
C6. This pharmacy is good at preventing mistakes	80.6	90.3	.104
C9. The way we do things in this pharmacy reflects a strong focus on patient safety.	89.4	91	.166
Documenting mistakes			
D1. When a mistake reaches the patient and could cause harm but does not, how often is it documented?	64	67.8	0.172
D2. When a mistake reaches the patient but has no potential to harm the patient, how often is it documented?	53.9	65	.277
D3. When a mistake that could have harmed the patient is corrected BEFORE the medication leaves the pharmacy, how often is it documented?	59.2	62.2	.691

[a]Statistical analysis using Chi-square test.

[b] Negatively worded question.

*Statistical significance ($P < .05$).

report which pharmacy they are employed in, thus, are more likely to report bias responses to favour the practice in their respective pharmacies.

5 | CONCLUSION

Findings from this study suggest that the surveyed community pharmacy personnel in Qatar had an overall positive response towards patient safety culture in their respective organisations. Consistent with the AHRQ pilot study and similar studies, staffing and work pressure in community pharmacy setting may warrant further improvement and potential targeting for interventions. In particular, efforts should be made by policymakers and retail pharmacy owners to upscale human resource for health by benchmarking and ensuring adequate number of pharmacy personnel and equitable distribution of tasks to preserve patient safety and quality of care provided. Considering the several limitations highlighted in the current study, several future recommendations are warranted. Future research should place more emphasis on investigating the impact of implementing patient safety-related educational workshops and seminars on patient safety culture and practices. Such interventions can lead to better safety culture and ultimately better health outcomes in community pharmacies. In addition, patient safety culture in community pharmacies may be investigated based on pharmacy location and company. Consequently, exploring the implementation of numerous strategies to enhance patient safety culture within healthcare organisations is highly recommended. Ultimately, we believe promoting patient safety culture in the community pharmacies in Qatar has a potential role in reducing medication misadventures (ie medication errors, ADEs and ADRs) and safeguarding patients from preventable harm.

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CONSENT TO PARTICIPATE

Yes, informed consent was reviewed and approved by the IRB.

DECLARATIONS

The authors have no conflicts of interest to declare.

ETHICS APPROVAL

Yes, approval by Qatar University Institutional Review Board (IRB).

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