

# Patient Safety Perception among Community Pharmacists in Babylon Governorate

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## Abstract

**Background:** One of the first points of contact between a patient and a health care system is the community pharmacist, so it is affordable to examine patient safety cultures in different environments by highlighting pharmacist understanding and helping to identify weaknesses in order to improve them. **Materials and Methods:** The study is described as a cross-sectional study that was performed using a self-administered questionnaire based on (Pharmacy Survey on Patient Safety Culture or PSOPSC) that was adapted in 2012 by The AHRQ (The Agency for Healthcare Research and Quality), the study was performed from October 2022 till January 2023, applied on community pharmacists from Babylon city center, districts, and subdistricts. A total of 200 responses were collected. The questionnaire was translated to Arabic for easy understanding of the questions, and the positive response rate (PRR) was calculated using a Likert five-point response scale of agreement. Responses were evaluated between “strongly disagree” with a 1-point score and “strongly agree” with a 5-point score. The “positive response” was calculated by addition of the total number of the two highest scores (4 and 5 points), whereas the term “other response” referred to the scores (1, 2, and 3 points); altogether, PRR was also compared to detect the effect of pharmacy location and years of pharmacists experience in their jobs. **Results:** Dimensions of “Patient counseling” had scored the highest PRR (86.4%), followed by the “Teamwork” and “Physical space and environment” domains which scored 86.2% and 79.5%, respectively. An overall PRR of 65.8% was scored for all items. **Conclusion:** 44% of the respondents evaluated the overall patient safety rating in their pharmacies as “very good,” about 41% evaluated it as “good,” and only 0.5% chose “poor.”

**Keywords:** Babylon Governorate, community pharmacists, patient safety

## INTRODUCTION

Patient safety is defined as “the nonexistence of unintentional damage occurring while receiving medical care, which means the measures taken to avoid, prevent, unfavorable outcomes that may emerge from the provision of healthcare.”<sup>[1]</sup> “The beliefs, values, and norms regarding how members of an organization should behave. Their policies, procedures, and processes to improve quality and safety” are all aspects of patient safety culture.<sup>[2]</sup>

Patient safety is crucial to the provision of high-quality care and has aroused public concern in all healthcare systems around the world. It takes into account factors that contribute to the enhancement of patient safety measures within a healthcare system, incorporating individual values, attitudes, perceptions, competencies,

and behavioral patterns that determine a company’s commitment to the proficiency of its safety management.<sup>[3,4]</sup>

In addition to the traditional role of community pharmacies in the provision of medications, Iraqi culture does, in fact, regard pharmacists as a reliable source of medical advice.<sup>[5]</sup> Community pharmacies are acknowledged on a global scale as the most accessible and economical locations to introduce healthcare services.<sup>[6]</sup>

They can significantly contribute to national efforts focused on improving patient care and quality of life.<sup>[7]</sup>

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When pharmacists provide the best therapeutic substances in the right doses to treat patients' or customers' medical conditions, patient safety in community pharmacies is demonstrated.<sup>[8,9]</sup>

According to a recent comprehensive assessment of the state of patient safety culture in Arab countries, promoting patient safety culture is required to promote patient safety in the Arab world.<sup>[10]</sup> Regulation is characterized by actions such as communicating in a way that fosters mutual trust, placing safety first, and displaying faith in the efficacy of preventive measures.<sup>[11]</sup>

It is well known that elements of the work environment, particularly a heavy workload, a lack of control over tasks, and inadequate managerial support, can have a negative effect on employees' well-being,<sup>[12]</sup> which has been shown to have an impact on the standard of patient care.<sup>[13]</sup> It seems appropriate to examine whether the growing expressions of concern about the care given through community pharmacies are warranted, given that medication and dispensing errors can have such detrimental effects on patients and given that there are still unanswered questions about the quality and safety of patient care, particularly when that care is provided by private sector organizations.<sup>[14]</sup>

Despite being postponed, a survey tool was created by the United States. Increasing interest in extending safety culture research outside of hospital settings is indicated by an AHRQ initiative to examine the patient safety culture among community pharmacists.<sup>[15]</sup> The Iraqi Ministry of Health, in partnership with the Iraqi Pharmacists Syndicate, has an important role in this regard through remedial courses that are held annually in health institutions and the Pharmacists Syndicate's work in terms of monitoring community pharmacies and imposing an appropriate work environment to reduce medical errors and raise the level of safety.<sup>[16]</sup>

The study sought to determine whether community pharmacists' practices in the Babylon Governorate support patient safety and the degree to which safety is a strategic priority. It also sought to assess employee perceptions of the pharmacy's overall safety rating and safety-related workplace factors, such as pharmacy staff communication, error mitigation, documentation, handling, and treatment of errors. Besides comprehending them and assisting in the identification of weak areas so that they can be strengthened.

## MATERIALS AND METHODS

### Study design and settings

This descriptive cross-sectional study was carried out from October 1, 2022 to January 31, 2023 utilizing a pretested self-administered questionnaire. Pharmacists who operate in neighborhood pharmacies in Babylon's city center, as

well as in nearby districts and subdistricts, were given the questionnaire.

### Calculating the sample size and the sampling plan

The sample size was determined based on data gathered from private pharmacies licensed by the Ministry of Health and the Iraqi Pharmacists Syndicate.<sup>[17]</sup> At the time of the study, there were a total of 1076 community pharmacies available, and they were dispersed throughout the central districts and subdistricts of Babylon. Two hundred replies were gathered.

### Study aid

The initial PSOPSC (Pharmacy Survey on Patient Safety Culture) was created by the AHRQ (The Agency for Healthcare Research and Quality) in 2012.<sup>[18]</sup>

Internal consistency and concept validity of this survey's psychometric qualities both indicated its suitability.<sup>[19]</sup>

Three sections are mostly used to categorize the items found in PSOPSC: It also includes three questions that assess the incidence of the documentation of mistakes and one question to rate overall patient safety. Questions about work experience, work hours, and the role of participants are also included. The survey covers the following topics: (a) working in this pharmacy, (b) communication and work pace, and (c) patient safety and response to mistakes.

### Calculating the positive response rate (PRR)

The PRR is calculated as follows: The majority of the questions used a Likert 5-point answer scale of agreement, with responses ranging from "strongly disagree with a score of 1 to "strongly agree with a score of 5. The two highest scores (4 and 5) were added together to calculate the "positive response, whilst the scores (1, 2, and 3 points) were added together to calculate the "other response."<sup>[20,21]</sup>

In order to determine whether there is a substantial difference depending on the pharmacy's location and the number of years the pharmacist has been practicing, PRR was statistically evaluated.

### Criteria for inclusion and exclusion

In the study, pharmacists who worked in community pharmacies were included. Other employees, including pharmacy assistants, cashiers, and cleaners, were not included. The answers that were incomplete, damaged, or hazy were discarded.

### Sample selection and data gathering

Ten pharmacists participated in the pilot study, which was initially conducted to make sure the questions were precise and reflected the study's goals. The purpose and goals of the study were explicitly communicated prior to the distribution of the questionnaires. Only one pharmacist was invited to participate if the pharmacy had more than

one. Those who expressed an interest in participating were given a consent form to ensure that their participation was voluntary. All information gathered was kept private and anonymous. The questionnaire was returned the same day it was collected. For the study, questionnaires were gathered manually and electronically.

### Statistical analysis

Fisher's Exact and Chi-square inferential analyses were applied. A statistical significance level of  $P=0.05$  was used to conduct exact tests to ascertain the impact of demographic and professional traits on safety culture composites and items. Results are presented as positive percentage scores for every item and the 13 survey instrument composites. The Statistical Package for Social Sciences (SPSS, version 28, IBM, New York) was used to analyze the collected data. Community pharmacies' "patient safety grades" were determined not only by asking the pharmacists to rate their pharmacy as "poor," "fair," "good," or "very good" but also by averaging PRR across all areas.

### Ethical approval

The study was conducted in accordance with the ethical principles that have their origin in the Declaration of Helsinki. It was carried out with patients' verbal and analytical approval before a sample was taken. The study protocol, the subject information, and the consent form were reviewed and approved by a local ethics committee according to document number 27 (including the number and the date on July 12, 2022) to get this approval.

## RESULTS

### Demographic properties of the applicant's community pharmacists

The study recruited 200 pharmacists with an average age of 33.5 (mean =  $28.6 \pm 6.1$ ) years from Babylon city center (69%) as well as districts and subdistricts (31%).

The percentage of female participation (58.5%) was more than that of males (41.5%).

Most of the participating pharmacists had years of service less than 5 years (69.5%). These data are illustrated in Table 1.

### Evaluation of safety among applicant community pharmacies in Babylon governorate

The pharmacists' insight about patient safety culture in their pharmacies is presented in Table 2.

The dimensions of "Patient counseling" scored the highest PRR (86.4%), followed by the "Teamwork" and "Physical space and environment" domains, which recorded 86.2% and 79.5%, in turn. An overall PRR of 65.8% was recorded for all items.

**Table 1: Demographic properties of the applicant's community pharmacists (N = 200)**

	<i>n</i>	%
Gender		
Male	83	41.5
Female	117	58.5
Pharmacy position		
City center	138	69
Districts and subdistricts	62	31
Year of pharmacy practice		
<5	139	69.5
6–10	40	20
11–15	12	6
16–20	3	1.5
>20	6	3
Age		
<25	76	38
26–30	77	38.5
31–35	22	11
36–40	14	7
41–45	5	2.5
>46	6	3
	<b>Mean</b>	<b>Std. deviation</b>
	28.6	6.1

### Pharmacy personnel perceptions of patient safety culture

The percentage of responses that are positive, negative, or neutral for each item on the questionnaire form is presented in Table 3. The highest positive domain was identified as patient counseling, with a record of 79.6% (mean of positive responses for patient counseling items 82, 79, 78). Teamwork came in second with a record-high 79.3% (mean of positive responses for teamwork item 86, 79.5, 72.2), and physical space and environment came in third with 71%. With 86% of the pharmacists reporting favorable responses, the statement "the staff treat each other with respect" had a high agreement response.

Regarding question number 5, which considers the applicant's own estimation of patient safety in his pharmacy, approximately 44% of the applicants esteemed the overall rating for patient safety in their pharmacy as "very good," about 41% rated it as "good," and only 0.5% choose "poor," this is illustrated in Figure 1.

### Effect of pharmacy location on patient safety perception among participant community pharmacists

As shown in Table 4, when comparing the Governorate center, districts, and subdistricts in Babylon for the safety culture assessment, there were statistically significant differences in the areas related to staffing, work pressure, and regularity (B10), responses to mistakes (C1), and documentation of mistakes (D1, D2, D3).

**Table 2: Rate of positive response (PRR) of single items and dimensions among community pharmacies (n = 200)**

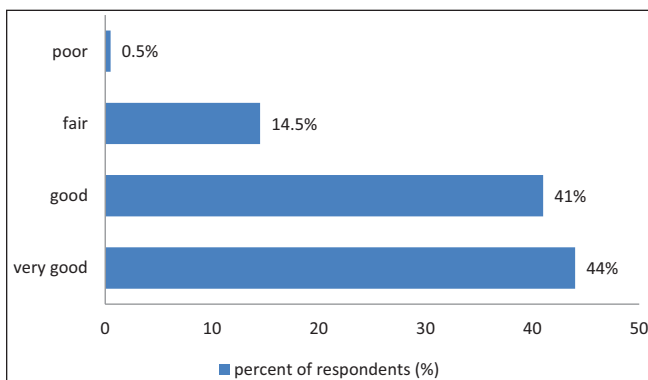
	PRR%
1. Physical space and environment	79.5
A1. This pharmacy is tidy	83.6
A2. This pharmacy has no chaos	71.1
A3. The physical design of this pharmacy maintains a decent workflow	83.8
2. Teamwork	86.2
A4. Staff members respect each other	90.8
A5. Staff in this pharmacy are evidently aware of their roles and tasks	86.6
A6. Staff members function as an efficient team	81.3
3. Staff training and skills	73.9
A7. Technicians in this pharmacy had the needed training	68.0
A8. Staff in this pharmacy have the needed abilities to effectively perform their duties	75.6
A9. New staff are given suitable orientation	78.3
A10. This pharmacy offers the staff sufficient training	73.8
4. Communication openness	73.6
In this pharmacy:	65.0
B1. Staff ideas and suggestions are appreciated	
B2. When staff are uncertain about something, they feel at ease asking inquiries.	75.9
B3. It is simple for personnel to raise concerns regarding patient safety with their manager or supervisor	80.0
5. Patient counseling	86.4
B4. We advise clients to consult with pharmacists about their prescriptions	88.2
B5. Our pharmacists chat with patients on how to utilize their drugs for a sufficient amount of time	85.9
B6. Our pharmacists provide crucial information to patients on their new medicines	85.1
6. Staffing, work pressure, and regularity	52.5
B7. Employees take enough breaks during their shifts	61.0
B8. When processing prescriptions, we feel rushed	57.1
B9. We have sufficient personnel to manage the workload	67.4
B10. It's challenging for workers in this pharmacy to work accurately because of interruptions and distractions (from phone calls, faxes, customers, etc.).	24.2
7. Communication about prescriptions across shifts	69.2
B11. We have definite guidelines for sharing crucial prescription information between shifts	64.9
B12. We follow established protocols to share prescription information between shifts	70.8
B13. It is effectively conveyed between shifts how troublesome prescriptions are progressing	72.0
8. Communication about mistakes	76.2
B14. Staff members at this drugstore talk about errors	77.3
B15. In this pharmacy, staff members talk about patient safety issues when they arise	71.5
B16. In this pharmacy, we discuss techniques to keep errors from occurring again	79.9
9. Responses to mistakes	62.2
C1. When employees make mistakes, they receive fair treatment	68.0
C2. Rather than criticizing the workers, this pharmacy encourages them to learn from their mistakes	66.5
C3. To understand why mistakes occur in this pharmacy, we examine staff behavior and the way we conduct ourselves (negative language)	70.6
C4. Employees believe that their errors are being used against them	43.5
10. Organizational learning—continuous development	64.8
C5. When an error occurs, we attempt to identify the issues with the work process that contributed to the error	71.4
C7. In this pharmacy, mistakes have resulted in positive changes	58.2
11. Overall opinions of patient safety	52.7
C8. In this pharmacy, patient safety comes second to sales	37.3
C9. Avoiding mistakes is well-handled in this pharmacy	68.1
12. Mistakes documentation	53.1
D1. How often is it documented when a mistake reaches the patient and could cause damage but does not?	51.2
D2. How often is it documented when a mistake reaches the patient but has no potential to damage the patient?	45.7
D3. How often is it documented when a mistake that could have damaged the patient is fixed BEFORE the medication leaves the pharmacy?	62.5
13. Communication barriers	34.2
1. Patient doesn't give pharmacists enough time to provide counseling	36.2
2. Pharmacists not dealing with the final drug user (patient). (negatively worded)	37.5
3. Language obstacles	31.4
4. The counseling issue is impacted by the gender of the healthcare provider (for example, a male pharmacist counseling a female patient)	32

**Table 3: Analysis of every single item of patient safety perception (N = 200)**

Composite items	Neg n (%)	Neu n (%)	Pos n (%)
1. Physical space and environment			
A1. This pharmacy is tidy	7 (3.5)	40 (20)	153 (76.5)
A2. This pharmacy has no chaos	27 (13.5)	54 (27)	119 (59.5)
A3. The physical design of this pharmacy maintains a decent workflow	4 (2)	42 (21)	154 (77)
2. Teamwork			
A4. Staff members respect each other	4 (2)	24 (12)	172 (86)
A5. Staff in this pharmacy are evidently aware of their roles and tasks	11 (5.5)	30 (15)	159 (79.5)
A6. Staff members function as an efficient team	13 (6.5)	42 (21)	145 (72.5)
3. Staff training and skills			
A7. Technicians in this pharmacy had the needed training	19 (9.5)	66 (33)	115 (57.5)
A8. Staff in this pharmacy have the needed abilities to effectively perform their duties	14 (7)	53 (26.5)	133 (66.5)
A9. New staff are given suitable orientation	19 (9.5)	44 (22)	137 (68.5)
A10. This pharmacy offers the staff sufficient training	19 (9.5)	54 (27)	127 (63.5)
4. Communication openness			
In this pharmacy:	25 (12.5)	68 (34)	107 (53.5)
B1. Staff ideas and suggestions are appreciated			
B2. When staff are uncertain about something, they feel at ease asking inquiries	18 (9)	51 (25.5)	131 (65.5)
B3. It is simple for personnel to raise concerns regarding patient safety with their manager or supervisor.	14 (7)	44 (22)	142 (71)
5. Patient counseling			
B4. We advise clients to consult with pharmacists about their prescriptions.	5 (2.5)	31 (15.5)	164 (82)
B5. Our pharmacists chat with patients on how to utilize their drugs for a sufficient amount of time	6 (3)	36 (18)	158 (79)
B6. Our pharmacists provide crucial information to patients on their new medicines	7 (3.5)	37 (18.5)	156 (78)
6. Staffing, work pressure, and regularity			
B7. Employees take enough breaks during their shifts	40 (20)	62 (31)	98 (49)
B8. When processing prescriptions, we feel rushed	48 (24)	66 (33)	86 (43)
B9. We have sufficient personnel to manage the workload.	34 (17)	55 (27.5)	111 (55.5)
B10. It's challenging for workers in this pharmacy to work accurately because of interruptions and distractions (from phone calls, faxes, customers, etc.)	111 (55.5)	61 (30.5)	28 (14)
7. Communication about prescriptions across shifts			
B11. We have definite guidelines for sharing crucial prescription information between shifts	33 (16.5)	62 (31)	105 (52.5)
B12. We follow established protocols to share prescription information between shifts	24 (12)	57 (28.5)	119 (59.5)
B13. It is effectively conveyed between shifts how troublesome prescriptions are progressing.	11 (5.5)	63 (31.5)	126 (63)
8. Communication about mistakes			
B14. Staff members at this drugstore talk about errors	15 (7.5)	49 (24.5)	136 (68)
B15. In this pharmacy, staff members talk about patient safety issues when they arise	13 (6.5)	64 (32)	123 (61.5)
B16. In this pharmacy, we discuss techniques to keep errors from occurring again	13 (6.5)	45 (22.5)	142 (71)
9. Responses to mistakes			
C1. When employees make mistakes, they receive fair treatment	30 (15)	57 (28.5)	113 (56.5)
C2. Rather than criticizing the workers, this pharmacy encourages them to learn from their mistakes	17 (8.5)	71 (35.5)	112 (56)
C3. To understand why mistakes occur in this pharmacy, we examine staff behavior and the way we conduct ourselves (negative language)	10 (5)	67 (33.5)	123 (61.5)
C4. Employees believe that their errors are being used against them.	90 (45)	54 (27)	56 (28)
10. Organisational learning—continuous development			
C5. When an error occurs, we attempt to identify the issues with the work process that contributed to the error	9 (4.5)	66 (33)	125 (62.5)
C7. In this pharmacy, mistakes have resulted in positive changes	22 (11)	83 (41.5)	95 (47.5)
11. Overall perceptions of patient safety			
C8. In this pharmacy, patient safety comes second to sales	134 (67)	27 (13.5)	39 (19.5)
C9. Avoiding mistakes is well-handled in This pharmacy	16 (8)	68 (34)	116 (58)

**Table 3: Continued**

Composite items	Neg n (%)	Neu n (%)	Pos n (%)
12. Mistakes documentation			
D1. How often is it documented when a mistake reaches the patient and could cause damage but does not?	47 (23.5)	76 (38)	77 (38.5)
D2. How often is it documented when a mistake reaches the patient but has no potential to damage the patient?	54 (27)	80 (40)	66 (33)
D3. How often is it documented when a mistake that could have damaged the patient is fixed BEFORE the medication leaves the pharmacy?	39 (19.5)	61 (30.5)	100 (50)
13. Communication barriers			
1. Patient doesn't give pharmacists enough time to provide counseling	95 (47.5)	60 (30)	45 (22.5)
2. Pharmacists not dealing with the final drug user (patient) (negatively worded)	78 (39)	72 (36)	50 (25)
3. Language obstacles	85 (42.5)	74 (37)	41 (20.5)
4. The counseling issue is impacted by the gender of the healthcare provider (for example, a male pharmacist counseling a female patient).	105 (52.5)	57 (28.5)	38 (19)

**Figure 1:** Overall estimation of patient safety culture in community pharmacies in Babylon ( $N = 200$ )

Pharmacists in the city center were significantly more distracted from phone calls than pharmacists and workers outside the city center ( $P = 0.021$ ). Two dimensions for documentation of mistakes revealed a significantly higher PRR outside the city center [Tables 3 and 4] show all that.

### Effect of years of experience on patient safety perception among participant community pharmacists

For each of the five groups of pharmacists according to their years of experience in the current community pharmacy (5, 5–10, 11–15, 16–20, and >20 years), the PRR for each item as well as the average rates for each PSOPSC dimension were individually computed.

Pharmacists with more than 20 years of experience significantly agree that staff feel rushed when processing prescriptions and have enough staff to handle the workload, in contrast to those with less than 5 years of experience ( $P = 0.037$ ), and they also report having standard procedures for communicating prescription information across shifts than those with less experience ( $P = 0.001$ ).

Additionally, they claimed to have more established protocols for sharing prescription information across

shifts than those with fewer years of expertise. As indicated in Table 5, pharmacists with less experience than 5 years are considerably more likely than others to feel comfortable asking inquiries when they are doubtful of anything ( $P = 0.041$ ).

## DISCUSSION

This is the first study of its kind in Babylon province, specifically to present information on community pharmacists' viewpoints on patient safety. It is crucial to assess the safety culture because it has been shown that team dynamics and organizational culture have an impact on patient outcomes and can be used as indicators of success.<sup>[22]</sup> The culture of safety has gained importance in studies on patient safety, and there is an increasing focus on maintaining effective safety-improving measures.<sup>[23]</sup>

The findings of this study were in line with those of a study carried out in Wisconsin, USA<sup>[24]</sup>, showing the highest level of agreement and positivity in the field of patient counseling. The role played by community pharmacists in ensuring that medications are used appropriately, improving patient outcomes, and preventing medication misuse is vital.<sup>[25]</sup> It was established during the drug course that self-administration was challenging and prone to many mistakes.<sup>[26]</sup>

Patient safety culture received an overall average PRR score of 65.8% for the whole questionnaire questions, which is less than in earlier research done in Malaysia<sup>[27]</sup> and China.<sup>[28]</sup> A considerable variation in PRR values was found across the patient safety aspects, according to the study's findings.

The patient counseling composite had the highest response. This suggests that staff members at neighborhood pharmacies view counseling as a crucial aspect of patient safety. Evidence from the literature suggests that patient counseling gives pharmacists the chance to spot and fix drug-related issues.<sup>[8]</sup>

**Table 4: Effect of pharmacy location on patient safety perception among participant community pharmacists**

	City center	Districts and subdistricts	P value
<i>1. Physical space and environment</i>			
A1. This pharmacy is tidy	85	80.4	0.790
A2. This pharmacy has no chaos	72.9	66.8	0.280
A3. The physical design of this pharmacy maintains a decent workflow	83.4	84.6	0.602
<i>2. Teamwork</i>			
A4. Staff members respect each other	90.9	90.6	0.401
A5. Staff in this pharmacy are evidently aware of their roles and tasks	88.2	82.9	0.878
A6. Staff members function as an efficient team	81	81.9	0.869
<i>3. Staff training and skills</i>			
A7. Technicians in this pharmacy had the needed training	70.5	62.5	0.237
A8. Staff in this pharmacy have the needed abilities to effectively perform their duties	74.9	77.1	0.555
A9. New staff are given suitable orientation	77.2	80.8	0.807
A10. This pharmacy offers the staff sufficient training	70.9	79.7	0.129
<i>4. Communication openness</i>			
In this pharmacy:	64.7	65.6	0.204
B1. Staff ideas and suggestions are appreciated			
B2. When staff are uncertain about something, they feel at ease asking inquiries	74.4	79.1	0.419
B3. It is simple for personnel to raise concerns regarding patient safety with their manager or supervisor	76.1	88.3	0.118
<i>5. Patient counseling</i>			
B4. We advise clients to consult with pharmacists about their prescriptions	87.3	90	0.523
B5. Our pharmacists chat with patients on how to utilize their drugs for a sufficient amount of time	86	85.6	0.835
B6. Our pharmacists provide crucial information to patients on their new medicines	84.3	86.9	0.827
<i>6. Staffing, work pressure, and regularity</i>			
B7. Employees take enough breaks during their shifts	63.8	54.8	0.395
B8. When processing prescriptions, we feel rushed	56.8	57.8	0.066
B9. We have sufficient personnel to manage the workload	67.7	67	0.071
B10. It's challenging for workers in this pharmacy to work accurately because of interruptions and distractions (from phone calls, faxes, customers, etc.)	27	17.9	0.021*
<i>7. Communication about prescriptions across shifts</i>			
B11. We have definite guidelines for sharing crucial prescription information between shifts	65.8	63	0.788
B12. We follow established protocols to share prescription information between shifts	70.9	70.6	0.377
B13. It is effectively conveyed between shifts how troublesome prescriptions are progressing	72.5	70.9	0.499
<i>8. Communication about mistakes</i>			
B14. Staff members at this drugstore talk about errors	76.2	79.7	0.813
B15. In this pharmacy, staff members talk about patient safety issues when they arise	73.2	67.7	0.328
B16. In this pharmacy, we discuss techniques to keep errors from occurring again	79.7	80.5	0.782
<i>9. Responses to mistakes</i>			
C1. When employees make mistakes, they receive fair treatment	67.6	68.8	0.083
C2. Rather than criticizing the workers, this pharmacy encourages them to learn from their mistakes	64.2	71.6	0.737
C3. To understand why mistakes occur in this pharmacy, we examine staff behavior and the way we conduct ourselves (negative language)	66.9	78.2	0.275
C4. Employees believe that their errors are being used against them.	45	40	0.401
<i>10. Organizational learning—continuous development</i>			
C5. When an error occurs, we attempt to identify the issues with the work process that contributed to the error	75.2	62.7	0.301
C7. In this pharmacy, mistakes have resulted in positive changes	57.8	59	0.768
<i>11. Overall perceptions of patient safety</i>			
C8. In this pharmacy, patient safety comes second to sales	40.6	29	0.132
C9. Avoiding mistakes is well-handled in This pharmacy.	66.9	70.6	0.874

**Table 4: Continued**

	City center	Districts and subdistricts	P value
<i>12. Mistakes documentation</i>			
D1. How often is it documented when a mistake reaches the patient and could cause damage but does not?	45	63.5	0.048*
D2. How often is it documented when a mistake reaches the patient but has no potential to damage the patient?	41.7	53.3	0.049*
D3. How often is it documented when a mistake that could have damaged the patient is fixed BEFORE the medication leaves the pharmacy?	62.4	62.8	0.005
<i>13. Communication barriers</i>			
1. Patient doesn't give pharmacists enough time to provide counseling	33.4	42.3	0.507
2. Pharmacists not dealing with the final drug user (patient) (negatively worded)	38.9	34.5	0.113
3. Language obstacles	33.2	27.4	0.935
4. The counseling issue is impacted by the gender of the healthcare provider (for example, a male pharmacist counseling a female patient)	33.9	26.7	0.470

Additionally, the rating indicates the commitment of pharmacy staff to patient engagement and their readiness to speak with patients for a sufficient amount of time to discuss both prescription and numerous over-the-counter medications available in Babylon. These results agree with those from the AHRQ Database Report and a recent study that was carried out in the United States.<sup>[24,29]</sup>

The “Teamwork” and “Physical Space and Environment” composites from the current study likewise showed relatively high percent favorable response ratings (79.3% and 71%, respectively). These excellent results highlight the significant role that collaboration plays in ensuring patient safety in community pharmacy practices. It also shows that staff members appreciate one another, work well as a team, and are aware of their individual responsibilities. The positive response to the “Physical Space and Environment” composite also shows that the pharmacy staff thinks their individual pharmacies are well-run, clutter-free, and have a strong workflow-supporting layout. In other words, patient safety is increased by a pharmacy that is clean, well-designed, and clutter-free. However, the “Staffing, Work Pressure, and Pace” composite (40.4%) and “Overall perceptions of patient safety” (37.8%) received the lowest percent positive response scores, which is in line with the results of similar studies conducted in the United States, Kuwait, Malaysia, China, and Taiwan, where “Staffing, Work Pressure, and Pace” was reported to be the lowest scoring composite.<sup>[28,30-33]</sup>

In comparison to those who had worked for less than a year, respondents with six or more years of practice experience in Babylon significantly responded more favorably to survey questions that highlighted staff treating each other with respect, staff taking enough breaks during shifts, and staff having clear expectations about exchanging crucial prescription information across shifts.

These results may be explained by the fact that those with more work experience are better able to manage patient

safety-related issues and adjust to the enormous workload than those with less experience, who reported that longer years of experience are related to the pharmacy staff's increased awareness of the pitfalls within the pharmacy workflow and would subsequently effectively prevent their occurrence efficiently, which would lower the chance of further medication errors.<sup>[31]</sup>

The majority of pharmacists (85%) gave their current pharmacy ratings of “very good” or “good” or higher for overall patient safety, indicating a tough feeling of appreciation for the importance of patient safety to their pharmacy. This ranking, however, could not accurately reflect the level of safety present in neighborhood pharmacies. Regarding the focus on patient safety seen in hospital settings, the community pharmacy sector is still in its infancy.

Community pharmacists frequently do not contribute to safety estimations to look at possible or actual errors, nor do they manage organizational risk. The intricacies of traits that go into safety science may, therefore, be outside the scope of pharmacists' knowledge or expertise. They might not be aware of the ways in which their current safety infrastructure (such as error reporting systems and safety cultures) could be encouraging or obstructing patient safety in their pharmacy.<sup>[34]</sup>

## CONCLUSION

“Patient counseling,” “teamwork,” and “physical space and environment” among all PSOPSC items scored the highest positive PRR. On the other hand, communication barriers scored the lowest PRR.

## Recommendations

1. We recommend performing the study on a larger geographical scale, such as including all Middle Euphrates Governorates in the study.
2. To overstress and to work on improvement of patient safety perception on dimension 13 (communication

**Table 5: Effect of years of experience on patient safety perception among participant community pharmacists**

	<5 PPR%	6–10 PPR%	11–15 PPR%	16–20 PPR%	>20 PPR%	P value
<i>1. Physical space and environment</i>						
A1. This pharmacy is tidy	82.4	86.1	94.5	75	75	0.554
A2. This pharmacy has no chaos	69.6	72.1	88	100	40	0.301
A3. The physical design of this pharmacy maintains a decent workflow	82.8	86.3	94	100	57.1	0.623
<i>2. Teamwork</i>						
A4. Staff members respect each other	90.6	90.3	94.3	72.7	100	0.947
A5. Staff in this pharmacy are evidently aware of their roles and tasks	85.5	88.1	94.4	75	88.5	0.758
A6. Staff members function as an efficient team	82.9	70.3	88.5	100	88	0.450
<i>3. Staff training and skills</i>						
A7. Technicians in this pharmacy had the needed training	65.9	72.1	74.5	100	57.1	0.850
A8. Staff in this pharmacy have the needed abilities to effectively perform their duties	75.8	79.7	80.9	0	60	0.435
A9. New staff are given suitable orientation	76.9	84.3	81.6	75	61.9	0.972
A10. This pharmacy offers the staff sufficient training	73.7	75.2	77.1	72.7	57.1	0.943
<i>4. Communication openness</i>						
In this pharmacy:	67.9	56.5	48.7	0	100	0.037*
B1. Staff ideas and suggestions are appreciated						
B2. When staff are uncertain about something, they feel at ease asking inquiries	79.6	69.9	70.2	0	66.7	0.041*
B3. It is simple for personnel to raise concerns regarding patient safety with their manager or supervisor	81.1	72.2	88.7	72.7	88.5	0.637
<i>5. Patient counseling</i>						
B4. We advise clients to consult with pharmacists about their prescriptions	89.1	81.8	94.3	75	100	0.601
B5. Our pharmacists chat with patients on how to utilize their drugs for a sufficient amount of time	85.7	82	94.3	100	88.5	0.988
B6. Our pharmacists provide crucial information to patients on their new medicines	86.6	76.1	94.2	100	78.3	0.512
<i>6. Staffing, work pressure, and regularity</i>						
B7. Employees take enough breaks during their shifts	58.6	64.5	79.5	80	42.1	0.691
B8. When processing prescriptions, we feel rushed	57.7	55.4	60.5	0	62.5	0.016*
B9. We have sufficient personnel to manage the workload	63.5	71.1	84.8	66.7	88.5	0.001*
B10. It's challenging for workers in this pharmacy to work accurately because of interruptions and distractions (from phone calls, faxes, customers, etc.)	21.8	33.7	19.2	0	35.7	0.095
<i>7. Communication about prescriptions across shifts</i>						
B11. We have definite guidelines for sharing crucial prescription information between shifts	65.2	63.4	71.1	50	59.1	0.517
B12. We follow established protocols to share prescription information between shifts	70.4	68.6	75.6	57.1	88	0.008*
B13. It is effectively conveyed between shifts how troublesome prescriptions are progressing	71.8	77.9	68.2	40	59.1	0.407
<i>8. Communication about mistakes</i>						
B14. Staff members at this drugstore talk about errors	79.9	69	81.6	72.7	60.9	0.370
B15. In this pharmacy, staff members talk about patient safety issues when they arise	69.5	71.7	88.2	100	62.5	0.061
B16. In this pharmacy, we discuss techniques to keep errors from occurring again	80.3	79.4	80	72.7	78.3	0.715
<i>9. Responses to mistakes</i>						
C1. When employees make mistakes, they receive fair treatment	67.9	65.5	84.8	44.4	62.5	0.376
C2. Rather than criticizing the workers, this pharmacy encourages them to learn from their mistakes	69.9	54.3	74.5	0	75	0.533
C3. To understand why mistakes occur in this pharmacy, we examine staff behavior and the way we conduct ourselves (negative language)	69.1	73	76.1	75	75	0.966
C4. Employees believe that their errors are being used against them.	42.5	47	47.2	40	35.7	0.566
<i>10. Organisational learning—continuous development</i>						
C5. When an error occurs, we attempt to identify the issues with the work process that contributed to the error	73.2	63.4	88	72.7	42.9	0.765
C7. In this pharmacy, mistakes have resulted in positive changes	57.9	55.6	65.1	72.7	59.1	0.695

Table 5: Continued

	<5 PPR%	6–10 PPR%	11–15 PPR%	16–20 PPR%	>20 PPR%	P value
<i>11. Overall perceptions of patient safety</i>						
C8. In this pharmacy, patient safety comes second to sales	38.9	26.7	34.6	62.5	57.1	0.888
C9. Avoiding mistakes is well-handled in This pharmacy	65.3	66.9	87.8	100	76	0.538
<i>12. Documentation of mistakes</i>						
D1. How often is it documented when a mistake reaches the patient and could cause damage but does not?	53.3	50.4	37.8	0	50	0.171
D2. How often is it documented when a mistake reaches the patient but has no potential to damage the patient?	43.6	54.2	38.2	44.4	47.4	0.406
D3. How often is it documented when a mistake that could have damaged the patient is fixed BEFORE the medication leaves the pharmacy?	62.8	67.6	43.2	50	61.9	0.638
<i>13. Communication barriers</i>						
1. Patient doesn't give pharmacists enough time to provide counseling	39.2	34	13.3	0	33.3	0.870
2. Pharmacists not dealing with the final drug user (patient). (negatively worded)	37.9	42.6	29.4	0	23.5	0.785
3. Language obstacles	30.8	33.3	28.6	57.1	26.7	0.458
4. The counseling issue is impacted by the gender of the healthcare provider (for example, a male pharmacist counseling a female patient)	29.5	31.4	48.5	50	38.5	0.168

barriers), which has recorded the lowest PRR among all other dimensions, by managing work pressure so that a pharmacist can have sufficient time for patient counseling and to work on language and gender barriers that may weaken the pharmacist–patient communication even more.

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### Conflicts of interest

There are no conflicts of interest.

### REFERENCES

- Iom. To Err is Human: Building a Safer Health System. Washington (DC): National Academies Press (US); 2000.
- Chinthammit C, Rupp MT, Armstrong EP, Modisett T, Snead RP, Warholak TL. Evaluation of a guided continuous quality improvement program in community pharmacies. *J Pharm Policy Pract* 2017;10:26.
- Nguyen EE, Connolly PM, Wong V. Medication safety initiative in reducing medication errors. *J Nurs Care Qual* 2010;25:224-30.
- Patient safety culture [Internet]. World Health Organization. 2019. Available from: <https://www.who.int/patientsafetyculture/en/>. [Last accessed on Mar 7, 2019].
- Ibrahim IR, Al Tukmagi HF, Wayyes A. Attitudes of Iraqi society towards the role of community pharmacists. *Innov Pharm* 2013;4:1-5.
- Hillier-Brown F, Bambra C, Thomson K, Balaj M, Walton N, Todd A. The effects of community pharmacy public health interventions on population health and health inequalities: A systematic review of reviews protocol. *Syst Rev* 2017;6:1-5.
- El-Sharif S, Alrahman N, Khaled N, Sayah N, Gamal E, Mohamed A. Assessment of patient's satisfaction with pharmaceutical care services in community pharmacies in the United Arab Emirates. *Arch Pharm Pract* 2017;8:22.
- Norden HA, Kalvemarm SS, Lindblad AK. Exploring the relationship between safety culture and reported dispensing errors in a large sample of Swedish community pharmacies. *BMC Pharmacol Toxicol* 2012;13:4.
- Melton B, Lai Z. Review of community pharmacy services: What is being performed, and where are the opportunities for improvement? *Integr Pharm Res Pract* 2017; Volume 6:79-89.
- Elmontsri M, Almashrafi A, Banarsee R, Majeed A. Status of patient safety culture in Arab countries: A systematic review. *BMJ Open* 2017;7:e013487.
- Sammer CE, Lykens K, Singh KP, Mains DA, Lackan NA. What is patient safety culture? A review of the literature. *J Nurs Scholarsh* 2010;42:156-65.
- Michie S, Williams S. Reducing work related psychological ill health and sickness absence: A systematic literature review. *Occup Environ Med* 2003;60:3-9.
- Michie S, West MA. Managing people and performance: An evidence based framework applied to health service organizations. *Int J Manag Rev* 2004;2:91-111.
- Immins N. Challenges of private provision in the NHS. *Br Med J* 2005;331:1193-5.
- AHRQ. Community Pharmacy Survey on Patient Safety Culture. 2012. Available from: <http://www.ahrq.gov/professionals/quality-patient-safety/patientsafetyculture/pharmacy/index.html>. [Last accessed on 25 Sep 2013].
- Pharmacists Syndicate Law No. 112 of 1966, Chapter Two.
- <http://iraqipharma.org/IDManagement/Display/pharmacy>
- Abdallah W, Johnson C, Nitzl C, Mohammed MA. Arabic version of pharmacy survey on patient safety culture: Hospital pharmacy settings. *SAGE Open Med* 2020;8:2050312120951069.
- Westat. Preliminary comparative results: Pharmacy survey on patient safety culture. *Dep Health Hum Serv* 2012.
- Lewis JR. Multipoint scales: Mean and median differences and observed significance levels. *Int J Human Comput Interact* 1993;5:383-92.
- Finstad K. Response interpolation and scale sensitivity: Evidence against 5-point scales. *J Usabil Stud* 2010;5:104-10.
- Danielsson M, Nilsen P, Öhrn A, Rutberg H, Fock J, Carlford S. Patient safety subcultures among registered nurses and nurse assistants in Swedish hospital care: A qualitative study. *BMC Nurs* 2014;13:1-9.
- Stoyanova R, Dimova R, Tarnovska M, Boeva T, Dimov R, Doykov I. Comparing patient safety culture in Bulgarian, Croatian and American hospitals—Preliminary results. *Med Pharm Rep* 2019;92:265-70.
- Aboneh EA, Stone JA, Lester CA, Chui MA. Evaluation of patient safety culture in community pharmacies. *J Patient Saf* 2020;16:e18-24.

25. Alaqeel S, Abanmy NO. Counselling practices in community pharmacies in Riyadh, Saudi Arabia: A cross-sectional study. *BMC Health Serv Res* 2015;15:1-9.
26. Schumacher PM, Neining MP, Kaune A, Bertsche T. Counseling patients on correct drug handling in German community pharmacies: Experiences and opinions of pharmaceutical staff. *Int J Clin Pharm* 2019;41:151-8.
27. Sivanandy P, Maharajan MK, Rajiah *et al.* Assessment of patient safety culture among Malaysian retail pharmacists: Results of a self-reported survey. *Patient Preference* 2016;10:1317-25.
28. Jia P, Zhang LH, Zhang MM, *et al.* Safety culture in a pharmacy setting using a pharmacy survey on patient safety culture: A cross-sectional study in China. *BMJ Open* 2014;4:e004904.
29. SOPS Community Pharmacy Database. Content last reviewed April 2019. Agency for Healthcare Research and Quality. Rockville, MD. Available from: <https://www.ahrq.gov/sops/databases/pharmacy/index.html>. [Last accessed on 9 Feb 2020].
30. AHRQ. Community Pharmacy Survey on Patient Safety Culture. 2012. Preliminary Comparative Results. Available from: <http://www.ahrq.gov/professionals/quality-patient-safety/patientsafetyculture/pharmacy/2012/index.html>. [Last accessed on 10 Apr 2019].
31. SOPS Community Pharmacy Database. Content last reviewed April 2019. Agency for Healthcare Research and Quality. Rockville, MD. <https://www.ahrq.gov/sops/databases/pharmacy/index.html>. [Last accessed on Feb 9, 2020].
32. Sivanandy P, Maharajan MK, Rajiah K, Wei TT, Loon TW, Yee LC. Evaluation of patient safety culture among Malaysian retail pharmacists: Results of a self-reported survey. *Patient Preference* 2016;10:1317-25.
33. Alsaleh F, Abahussain E, Altabaa H, Al-Bazzaz M, Almandil N. Assessment of patient safety culture: A nationwide survey of community pharmacists in Kuwait. *BMC Health Serv Res* 2018;18:884.
34. Cohen MR. Why error reporting systems should be voluntary. *BMJ* 2000;320:728-9.