

Evaluating Patient Safety Culture in Iraqi Community Pharmacies

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Abstract

Patient safety is the main issue in health care organization, the agency for Healthcare Research and Quality defines it as, "freedom from accidental or preventable injuries produced by medical care. Thus, practices or interventions that improve patient safety are those that reduce the occurrence of preventable adverse events". The purpose of this study was to evaluate Iraqi pharmacist perception about the culture of patient safety. As well as estimate whether safety is a principal issue in their pharmaceutical practice. This study was carried out on 435 pharmacists who are working in community pharmacies in various Iraqi provinces. A survey was distributed via the internet during the period from May to June 2020. A community pharmacy questionnaire was used to evaluate the awareness of pharmacists regarding the culture of patient safety. A result of this study showed that the patient counseling field was the most positive one among the studied domains with score 68.8% of positive awareness and 70.4% of the pharmacists indicated that they inform patients with needed information about their new prescriptions. In contrast, staffing and work pressure scored the lowest positive response (36.55%). Although 66.7% of the participants stated they have the appropriate number of staff in their pharmacies to deal with the workload.

Keywords: Iraqi pharmacist, Patient Safety Culture, Community pharmacy.

تقييم ثقافة سلامة المريض في صيدليات المجتمع العراقي

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الخلاصة

تعتبر سلامة المرضى قضية رئيسية في منظمة الرعاية الصحية، وتعرفها وكالة أبحاث الرعاية الصحية والجودة بأنها "التحرر من الإصابات العرضية أو التي يمكن الوقاية منها الناتجة عن الرعاية الطبية. وبالتالي، فإن الممارسات أو التدخلات التي تعمل على تحسين سلامة المرضى هي تلك التي تقلل من حدوث الأحداث السلبية التي يمكن الوقاية منها. الهدف من هذه الدراسة هو تقييم تصور الصيدلي العراقي عن ثقافة سلامة المرضى. بالإضافة إلى تقدير ما إذا كانت السلامة هي القضية الرئيسية في ممارستهم الصيدلانية، أجريت هذه الدراسة على 435 صيدليًا يعملون في صيدليات المجتمع في مختلف المحافظات العراقية. تم توزيع الاستبيان عبر الإنترنت خلال الفترة من أيار إلى حزيران 2020. تم استخدام استبيان صيدلية المجتمع لتقييم الوعي بثقافة سلامة المرضى بين الصيادلة. تظهر نتيجة هذه الدراسة أن مجال إرشاد المرضى كان الأكثر إيجابية بين المجالات المدروسة بنسبة 68.8% من الوعي الإيجابي و 70.4% من الصيادلة أشاروا إلى أنهم يطلعون المرضى بالمعلومات اللازمة عن الوصفات الجديدة. في المقابل، سجل التوظيف وضغط العمل أدنى استجابة إيجابية (36.55%). على الرغم من أن 66.7% من المشاركين ذكروا أن لديهم العدد المناسب من الموظفين في صيدلياتهم للتعامل مع عبء العمل. الكلمات المفتاحية: صيدلي عراقي، ثقافة سلامة المريض، استبيان صيدلية المجتمع، المحافظات العراقية.

Introduction

Indeed, Iraqi society considers pharmacist as a trusted source for medical advice besides the traditional role of community pharmacy in medication supply⁽¹⁾. Community pharmacies recognized internationally as the most easily accessible and cost-effective sites for introducing healthcare services⁽²⁾. Pharmacists working in the community pharmacies can considerably add to national work aimed for the enhancement of patients care and quality of life⁽³⁾. Since pharmacists are usually responsible for optimizing drug therapy and preventing medication errors, an inspection of pharmacists' safety culture in various settings can provide insight into their

understanding and help identify weakness domains in order to improve them⁽⁴⁾. A public concern is globally raising around patient safety issue in various health care settings⁽⁵⁾. Institute of Medicine (IOM) has publishing its first statement about patient safety and patient hurt "To Err Is Human: Building a Safer Health System", which has highlight the topic of safety as well as preventable medical errors cost at the forefront of healthcare practice and the national conversation⁽⁶⁻⁷⁾. The culture of patient safety is explained as "the beliefs, values, and norms regarding how members of an organization should behave and includes policies, procedures, and processes to improve quality and safety"⁽⁸⁾.

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It is very important to establish and maintain a solid base of safety culture which identified as an essential constituent of using medication safely⁽⁸⁾. Despite all efforts to minimize the occurrence of patient hurt, actually every 20 patients there was one patient subjected to a preventable injury⁽⁹⁾. Worldwide, medication errors are considered a problem which requires serious efforts⁽¹⁰⁾. It is explained as “any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the health care professional, patient, or consumer”⁽¹¹⁾. The occurrence of such errors were documented as a pricey issue for health care organization in addition to its negative influence on patients and health care staff⁽¹²⁾.

Drug dispensing is considered as the main task in pharmaceutical practice, which in turn make it an important source of such errors, thus it can form a persistent risk to the safety of the patient⁽¹³⁾. One of the notable reasons for errors in pharmacy practice are distractions and interruptions⁽¹⁴⁾. In its recent issue of questionnaires about the culture of safety the American agency for Healthcare Research and Quality (AHRQ) published the Pharmacy Survey on Patient Safety Culture, which aimed to rising consciousness regarding safety culture assessment in community pharmacy⁽¹⁵⁾. Accordingly, the purpose of this study was doing to evaluate Iraqi pharmacist's perceptions who are working in community pharmacies about the culture of patient safety. As well as, it estimates whether safety is a primary issue in their practice.

Subject and Method

Participants

This study was a cross-sectional one that involved 435 pharmacists working in community pharmacies in many Iraqi provinces, from May to June 2020. The number of males participants was 195 (44.8%) while the number of females was 240 (55.2%).

Inclusion criteria

Pharmacists who are working in community pharmacies

Exclusion criteria

Other workers in community pharmacy such as pharmacist assistant

Method

The questionnaires

Assessing the culture of patient safety using precise comprehensive questionnaires designed for community pharmacy workers is known as the Pharmacy Survey on Patient Safety Culture⁽¹⁶⁻¹⁷⁾. The survey used with some modifications to suite Iraqi community pharmacy

system (for example there is no documentations for mistakes in Iraqi pharmacies). The survey form contains 36 items assembled into three-part which is working in this pharmacy, communication and work pace, the last one patient safety and response to mistakes. These three part assessed 11 important fields of patient safety culture⁽¹⁸⁾. Also, contains an overall rating question section and background questions about participant additional items were added to this section. It is distributed in the English language. The survey items were previously validated (pilot study). Five-point scale was designated for agreement or frequency type of answers was applied for responses measuring.

Administration of the questionnaires

It was an electronic survey using google form. The survey was distributed via the internet in professional groups of Iraqi pharmacists and as a mixed form (hardware and software) in Al-Qādisiyyah provinces to the pharmacists working in community pharmacies. The participation was optional, anonymous and no incentive was offered to the participants.

Statistical analysis

Analysis was done using Statistical Package for Social Science (SPSS, version 22, IBM, New York, USA). Descriptive statistics (means, standards deviations, frequencies, and percentages) of the participants were calculated. Agreement responses which include “strongly agree”, “agree”, “most of the time”, and “always” were combined to “positive” responses, while disagreement covers the following responses “strongly disagree” and “disagree” “never” and “rarely” was compiled into “negative” response. “Don’t know” were excepted from answers. Measurement of dimensions through calculations of positive responses means, for negatively worded items the negative answers combined to confirm dimensions positivity. Participants categorized according to their duration of working in the pharmacy into three groups: the first group has experience up to one year, the second group with 1-3 years of working, and the last group with longer duration of working more than three years of experience in the pharmacy. Kruskal-Wallis test (nonparametric test used for skewed distribution data) was used to measure the difference among participants regarding measured items according to working years

Results

The study recruited 435 pharmacists with an average age of 30.11 years. From 16 Iraqi provinces, Baghdad (31%) and Al-Qādisiyyah (30.3%) the most common participating provinces where showed in (Table1).

Table1. Provinces of the participants

Province	Frequency	Percent
Baghdad	135	31.0
Al-Qādisiyyah	132	30.3
Dhi-Qar	39	9.0
Najaf	27	6.2
Babylon	26	6.0
Karbala	24	5.5
Salahuddin	12	2.8
Wasit	9	2.1
Basra	7	1.6
Diyala	7	1.6
Muthanna	5	1.1
Anbar	4	.9
Maysan	4	.9
Kirkuk	2	.5
Erbil	1	.2
Dohuk	1	.2
Total	435	100.0

More than three-quarters (77.0%) of the participating pharmacists had a bachelor’s grade as demonstrated in (Table2)

Table 2. The participating pharmacist credentials

Degree	Frequency	Percent
Bachelor	335	77.0
Master	52	12.0
High diploma	24	5.5
PhD	11	2.5
Board of Pharmacy	13	3.0
Total	435	100.0

(Figure 1) demonstrated that the largest portion of the participants those working three or more years

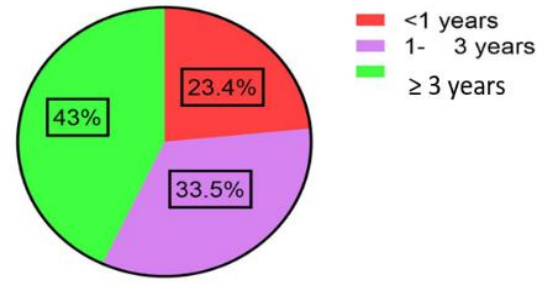


Figure1. The participants’ experience years in community pharmacies Safety culture assessment

Table 3 demonstrates the percentage of each type of response which appears as positive, negative, and neutral responses for each item in the questionnaire form. Patient counseling domain record 68.8 % (mean of positive responses for patient counseling item 66.4, 69.7, 70.4) considered the highest positive domain, the second-highest is teamwork with 68.5% (mean of positive responses for teamwork item 74.3, 61.8, 69.4), and the third dimension was organizational learning and continuous improvement with 68.3% (mean of positive response for organizational domain item 71.5, 69.7, 63.7), while the lowest field with 36.55% (mean of positive response of first and third item 39.8, 66.7 and negative response for the second and fourth item 24.3, 15.4) was staffing, work pressure, and pace.

Positive response to other domains ranged from 47.4% to 61.6%. The overall positive perception of safety between pharmacists was 61.6%. The statement “the staff treat each other with respect” scored high agreement response with an average of 3.82 (± 1.15), in other word 74.2% of the pharmacists reported positive response about the statement.

Table 3. Illustrations response type and percentage to survey item

1. Physical Space and Environment	Negative%	Neutral %	Positive%
“This pharmacy is well organized”.	14.9	16.1	66.9
“ This pharmacy is free of clutter/untidiness”	32.9	19.8	45.5
“The physical layout of this pharmacy supports good workflow”	18.4	18.4	58.2
2. Teamwork	Negative%	Neutral %	Positive%
“The staff treat each other with respect”	14.3	10.6	74.3
“ Staff in this pharmacy clearly understand their roles and responsibilities”	22.3	14.5	61.8
“Staff work together as an effective team”.	14.3	14.5	69.4
3. Staff Training and Skills	Negative%	Neutral %	Positive%
“Pharmacy assistants/helpers in this pharmacy receive the training they need to do their jobs”	25.1	16.60	55.4

Continued 3. Illustrations response type and percentage to survey item.

“Staff in this pharmacy have the skills they need to do their jobs well”	19.1	15.4	64.1
“Staff who are new to this pharmacy receive an adequate orientation”	20.0	17.0	61.6
“Staff get enough training from this pharmacy”	21.1	16.6	60.9
4. Communication Openness			
“ Staff ideas and suggestions are valued in this pharmacy”	17.5	33.8	47.1
“Staff feel comfortable asking questions when they are unsure about something”	17.0	13.8	68.1
“ It is easy for staff to speak up to their pharmacy manager (chief pharmacist) or pharmacy owner about patient safety concerns in this pharmacy” .	20.2	16.8	59.3
5. Patient Counseling	Negative%	Neutral %	Positive%
“ Pharmacists in this pharmacy encourage patients to talk to pharmacists about their medications”.	16.1	16.1	66.4
“ Our pharmacists spend enough time talking to patients about how to use their medications”	14.7	13.6	69.7
“ Our pharmacists tell patients important information about their new prescriptions”	12.7	15.2	70.4
6. Staffing, Work Pressure, and Pace	Negative%	Neutral %	Positive%
“Staff take adequate breaks during their shifts”	27.4	29.2	39.8
“We feel rushed when processing prescriptions”	24.3	33.1	34.0
“ We have enough staff to handle the workload”.	7.8	15.2	66.7
“Interruptions/distractions in this pharmacy (from phone calls, faxes, customers, etc.) make it difficult for staff to work accurately”.	15.4	25.5	33.8
7. Communication About Prescriptions Across Shifts	Negative%	Neutral %	Positive%
“We have clear expectations about exchanging important prescription information across shifts”	22.3	32.0	40.9
“ We have standard procedures for communicating prescription information across shifts”	22.7	20.9	49.7
“The status of problematic prescriptions is well communicated across shifts”	12.6	23.4	51.7
8. Communication About Mistakes	Negative%	Neutral %	Positive%
“ Staff in this pharmacy discuss mistakes”.	22.3	20.0	56.6
“ When patient safety issues occur in this pharmacy, staff discuss them.	6.9	23.0	55.6
“In this pharmacy, we talk about ways to prevent mistakes from happening again”	6.4	18.2	61.8
9. Response to Mistakes	Negative%	Neutral %	Positive%
“Staff are treated fairly when they make mistakes”	17.7	23.7	54.7
“This pharmacy helps staff learn from their mistakes rather than punishing them”	10.6	16.1	70.3
“We look at staff actions and the way we do things to understand why mistakes happen in this pharmacy”	10.3	19.8	65.7
“Staff feel like their mistakes are held against them”.	27.4	26.7	37.2
10. Organizational Learning—Continuous Improvement	Negative%	Neutral %	Positive%
“When a mistake happens, we try to figure out what problems in the work process led to the mistake”	10.8	14.0	71.5
“When the same mistake keeps happening, we change the way we do things”	9.4	16.8	69.7
“ Mistakes have led to positive changes in this pharmacy”	14.0	18.4	63.7
11. Overall Perceptions of Patient Safety	Negative%	Neutral %	Positive%
“This pharmacy places more emphasis on sales than on patient safety”	48.3	20.0	27.1
“This pharmacy is good at preventing mistakes”.	9.9	19.3	66.9
“The way we do things in this pharmacy reflects a strong focus on patient safety”	11.5	16.6	69.7

Assessment of pharmacist according to the experience years in pharmacy

Regarding work in this pharmacy, participants assessed according to experience years in the pharmacy, significant finding (P -value < 0.5) reported in this section. In other word, pharmacists with experience longer than three years, state pharmacy members were more aware of their task

than other groups of participants as showed in (Table 4). Another part the communication and work pace. Pharmacists who worked in pharmacy longer than three years demonstrated significant difference (P -value < 0.5) regarding interruptions/distractions in their pharmacies as compared to those who worked less than three years as showed in (Table 5).

Table 4. Difference in responses to working in this pharmacy items according to experience years.

Item	Years of working categories	N	Mean Rank	P-value
This pharmacy is well organized	<1	100	199.63	.438
	1- 3	139	214.60	
	≥3	184	216.76	
	Total	423		
Staff treat each other with respect	<1	102	204.05	.371
	1- 3	143	211.95	
	≥3	184	223.44	
	Total	429		
Pharmacy assistants/helpers in this pharmacy receive the training they need to do their jobs	<1	96	219.78	.361
	1- 3	138	199.50	
	≥3	186	213.87	
	Total	420		
Staff in this pharmacy clearly understand their roles and responsibilities	<1	100	205.80	.029*
	1-3	141	197.55	
	≥3	186	230.88	
	Total	427		
This pharmacy is free of clutter/untidiness	<1	100	202.96	.490
	1- 3	141	210.85	
	≥3	184	220.11	
	Total	425		
Staff in this pharmacy have the skills they need to do their jobs well	<1	101	222.57	.681
	1- 3	141	210.00	
	≥3	185	212.37	
	Total	427		
The physical layout of this pharmacy supports good workflow	<1	94	202.06	.516
	1- 3	135	199.39	
	≥3	182	212.93	
	Total	411		
Staff who are new to this pharmacy receive adequate orientation	<1	99	201.26	.388
	1- 3	143	213.48	
	≥3	185	221.22	
	Total	427		
Staff work together as an effective team	<1	100	203.79	.394
	1- 3	141	209.37	
	≥3	185	221.90	
	Total	426		
Staff get enough training from this pharmacy	<1	99	204.49	.569
	1- 3	142	212.90	
	≥3	186	219.90	
	Total	427		

Table 5. The difference in communication and work pace items according to years of working categories

Item	Years of working categories	N	Mean Rank	P-value
It is easy to speak up with pharmacist	<1	101	211.31	.498
	1- 3	137	200.17	
	≥ 3	180	215.59	
	Total	418		
Staff ideas and suggestions are valued in this pharmacy	<1	101	204.99	.705
	1- 3	144	215.24	
	≥ 3	181	216.87	
	Total	426		
Pharmacists in this pharmacy encourage patients to talk about their medications	<1	100	199.48	.373
	1-3	143	218.01	
	≥ 3	184	218.78	
	Total	427		
Staff take adequate breaks during their shifts	<1	101	203.50	.391
	1-3	138	203.72	
	≥ 3	181	219.57	
	Total	420		
We have clear expectations about exchanging important prescription information across shifts	<1	95	192.73	.112
	1- 3	140	198.86	
	≥ 3	177	219.94	
	Total	412		
Staff feel comfortable asking questions when they are unsure about something	<1	101	210.53	.243
	1-3	143	203.64	
	≥ 3	184	225.12	
	Total	428		
We have standard procedures for communicating prescription information across shifts	<1	95	191.31	.105
	1- 3	130	192.15	
	≥ 3	179	215.96	
	Total	404		
Our pharmacists spend enough time talking to patients about how to use their medications	<1	101	204.73	.416
	1-3	141	207.15	
	≥ 3	182	220.96	
	Total	424		
Staff in this pharmacy discuss mistakes	<1	102	204.20	.281
	1-3	144	208.42	
	≥ 3	182	225.09	
	Total	428		
We feel rushed when processing prescriptions	<1	91	202.16	.836.
	1- 3	132	200.88	
	≥ 3	173	194.76	
	Total	396		
Our pharmacists tell patients important information about their new prescriptions	<1	102	218.32	.790
	1- 3	142	214.48	
	≥ 3	181	208.84	
	Total	425		
We have enough staff to handle the workload	<1	101	222.48	.037*
	1- 3	141	191.78	
	≥ 3	182	223.01	
	Total	424		

Continued Table 5.

When patient safety issues occur in this pharmacy, staff discuss them	<1	100	203.57	.838
	1- 3	139	212.22	
	≥3	179	210.70	
	Total	418		
The status of problematic prescriptions is well communicated across shifts	<1	97	195.60	.125
	1- 3	136	195.26	
	≥3	177	218.79	
	Total	410		
In this pharmacy, we talk about ways to prevent mistakes from happening again	<1	102	203.67	.749
	1- 3	141	211.82	
	≥3	178	214.55	
	Total	421		
Interruptions/distractions in this pharmacy make it difficult for staff to work accurately	<1	96	186.72	.027*
	1- 3	138	200.14	
	≥3	180	224.22	
	Total	414		

Overall rating of pharmacists to their pharmacy regarding patient safety

The participating pharmacists rated the patient safety standards of their pharmacies as good with average 3.38 (± 0.9). More specifically, 82.3% of pharmacists rated their pharmacy patient safety standards between good and excellent as shown in the figure below.

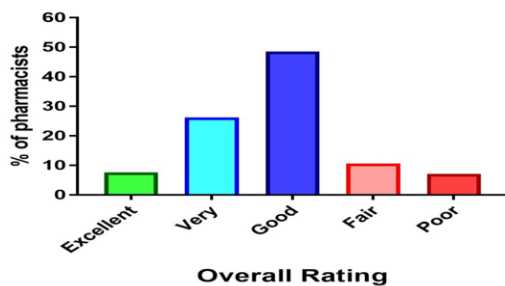


Figure 2. Overall rating of pharmacists to their pharmacies regarding patient safety issues.

Discussion

Culture of safety has grown to have a significant issue in research in the subject of patient safety and there is a developing consideration to maintain efficient interventions to enhance safety⁽¹⁹⁾ Measurement of safety culture is essential because the organizational culture as well as team attitudes have been shown to affect patient outcomes and may work as tools to observe progress⁽²⁰⁾. Result from this study showed the highest agreement and positivity in the patient counseling field which is similar to the result of study conducted in Wisconsin in the United States of America (Aboneh *et al* 2020)⁽¹⁶⁾.

Community pharmacists have a principal role in effectively use of medication, enhancing patient outcomes, as well as avoiding misuse of medication⁽²¹⁾. During the medication course, it was verified that self-administration was complicated and susceptible to many errors⁽²²⁾.

The efficient communication among patients and pharmacists is an essential factor in affecting the quality of patient counseling, and has an impact on healthcare outcomes, mutual trust, and patient satisfaction,⁽²³⁾. Teamwork scored second place in this study which is a similar findings to the result of study conducted in Wisconsin in the United States of America (Aboneh *et al* 2020)⁽¹⁶⁾.

Regarding pharmacy practice, teamwork is essential for improving patient care.⁽²⁴⁾ Favorable interaction between pharmacy members, can efficiently improve work processes and deal with unaccepted events that may occur during the daily work⁽²⁵⁾. Constantly pharmacy team can communicate with patients and realize the causes that influence patients' ability to control their chronic disorders⁽²⁶⁾. The field of organizational learning-continuous improvements recorded in third place in word of agreement response. Many researches show that medication errors attributed to different causes can be categorized into personal and organizational⁽²⁷⁾.

Persistent quality improvement focused on organization work process to figure out the source of errors and optimize patient safety⁽²⁸⁾. In the health system, culture of blame is an essential cause of unaccepted medical errors⁽²⁹⁾. Trust in the organization is a critical factor for establishing the culture of safety⁽³⁰⁾. Regarding the result of study staffing work pressure domain recorded lowest positive response. This is similar to study conducted in community pharmacies in Abu Dhabi in the United Arab Emirates (Alslubi *et al* 2019)⁽³¹⁾. It has also shown similarity to a study conducted in Malaysia (Sivanandy *et al*'s 2016)⁽³²⁾. And the same results were found in the previous Wisconsin study (Aboneh *et al* study 2020)⁽¹⁶⁾. In this study, 33.8% (around one-third) of the participant report their pharmacies to have interruptions which can influence workflow. Despite that 66.7% of the participants have stated

they have the appropriate number of staff in their pharmacies to deal with the workload, work-related pressure has an adverse influence on quality associated event, that reach to patient or those stopped before dispensing⁽³³⁾.

An additional suitable solution is training technicians who might able to reduce pharmacists dispensing workload,⁽³⁴⁾. There was a significant difference between pharmacist according to the experience year in pharmacy and distraction and interruptions. In other words, with a longer period of work in the pharmacy, interruptions of healthcare provider was a more considerable workload and interfere with workflow⁽³⁵⁾.

Most of the pharmacists (n=211) rate their pharmacies good about the standers of safety in their practice, which is similar to the result of study previously mentioned Wisconson study (Aboneh *et al* study 2020) were (92 %) of participant rate their pharmacies standers as good⁽¹⁶⁾.

Conclusion

Iraqi community pharmacists have shown patient safety priority orientation, and there was a notable collaboration and communication between pharmacy workers. Also, they show an interest in the pharmacy environment and workflow.

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