

Professional Challenges Facing Pharmacists Working at Public Hospitals in an Iraqi Province: A Qualitative Study

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Presented at the 2nd Scientific Conference for Postgraduate Students.

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Abstract

In Iraq, because of the dramatic turnovers facing the country for three decades, pharmacists continue to experience significant professional challenges in both the public and private sectors.

The present study aimed to explore the professional challenges and obstacles facing Iraqi pharmacists working in public hospitals.

This qualitative study included face-to-face semi-structured interviews with open-ended questions with hospital pharmacists between December 2022 and April 2023 in Karbala province. The participants were selected purposefully who had three or more years of work experience at governmental hospitals. The audio-recording interviews were scripted. Thematic analyses were used to generate themes and subthemes from the interviews.

Thirty-two pharmacists participated in this study. The study found that there are many challenges facing Iraqi pharmacists in hospitals. Some of which are related to the pharmacists themselves, such as suboptimal competency with an overwhelming number of pharmacists in each hospital, while the others are related to suboptimal organizational conditions, such as inadequate interdisciplinary collaboration, an unfriendly hospital environment as patients' confrontation, unequal task distributions, and inadequate technology and tools.

According to the study findings, greater emphasis should be placed on improving multidisciplinary teamwork, pharmacist competency, the pharmacists' role in hospitals and securing the supply of essential medicines. Most participants recommend enhancing quality over quantity of pharmacists in addition to finding areas and horizons to benefit from these large numbers of pharmacists.

Keywords: Iraqi pharmacists, hospital pharmacists, challenges, obstacles, Qualitative study.

التحديات المهنية التي تواجه الصيدلة العاملين في المستشفيات العامة في محافظة عراقية: دراسة نوعية

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#قدم خلال المؤتمر العلمي الثاني لطبية الدراسات العليا

اوزارة الصحة والبيئة، دائرة صحة كربلاء كربلاء ، العراق

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الخلاصة

في العراق، بسبب التحولات الهائلة التي تواجه البلاد لمدة ثلاثة عقود، لا يزال الصيدلة يواجهون تحديات مهنية كبيرة في كل من القطاعين العام والخاص.

هدفت الدراسة الحالية إلى استكشاف التحديات والعقبات المهنية التي تواجه الصيدلة العراقيين العاملين في المستشفيات العامة. تضمنت هذه الدراسة

النوعية مقابلات شبه منظمة وجهاً لوجه مع أسئلة مفتوحة مع صيدلة المستشفيات في محافظة كربلاء بين كانون الأول ٢٠٢٢ ونيسان ٢٠٢٣. تم

اختيار المشاركين عن قصد (مع خبرة لا تقل عن ٣ سنوات) للعمل في المستشفيات الحكومية. تمت كتابة المقابلات الصوتية. تم استخدام التحليل

الموضوعي لتحليل نتائج المقابلة وتوليد مواضيع رئيسية وفرعية من هذه المقابلات

أشارك ٣٢ صيدلياً في هذه الدراسة. ووجدت الدراسة أن هناك العديد من التحديات التي تواجه الصيدلة العراقيين في المستشفيات. يرتبط بعضها

بالصيدلة أنفسهم، مثل الكفاءة دون المستوى الأمثل مع عدد هائل من الصيدلة في كل مستشفى، بينما يرتبط البعض الآخر بظروف تنظيمية دون

المستوى المطلوب، مثل عدم كفاية التعاون بين الكوادر الصحية، والبيئة المتوترة داخل المستشفى كمواجهة المرضى، وعدم المساواة في توزيع

المهام، وكذلك عدم كفاية التكنولوجيا والأدوات.

وفقاً لنتائج الدراسة، يجب التركيز بشكل أكبر على تحسين وتعزيز العمل الجماعي متعدد التخصصات، بالإضافة إلى إيلاء المزيد من الاهتمام لدور

الصيدلة في المستشفيات وبذل المزيد من الجهود لتوفير الأدوية. يوصي معظم المشاركون بتحسين الجودة مقابل عدد الصيدلة بالإضافة إلى إيجاد

مجالات وأفاق للاستفادة من هذه الأعداد الكبيرة من الصيدلة.

الكلمات المفتاحية: صيدلة عراقيون، صيدلة المستشفيات ، تحديات، معوقات، دراسة نوعية

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Received:31 / 5/ 2023

Accepted: 11/7 /2023

Introduction

The Iraqi healthcare system is confronted with a variety of issues and challenges that have hampered its development for more than three decades and have had an impact on the quality of medical services provided to patients^(1, 2). Pharmacists are the healthcare providers in charge of ensuring that all patients receive appropriate drug therapy outcomes at the community and institutional levels⁽³⁾. The scope of the pharmacy profession has been evolving in different countries, transforming the pharmacist's role from compounder and dispensing chemist to drug therapy manager, and his responsibilities have shifted from pre- and para-clinical to clinical, including manufacturing, quality control, drug discovery, regulatory pharmaceuticals, drug dispensing, patient education, patient counseling, hospital/pharmacy administration, and community services^(4, 5).

In public hospitals, there are at least four major fields of pharmacy practice: drugstore, internal (inpatient) pharmacy, outpatient pharmacy, and clinical pharmacy⁽⁶⁾. The imbalance between the demand and supply of pharmacists varies between countries and is directly related to expenditure on health and economic development. Hospital pharmacists in Iraq have a limited role in providing pharmaceutical care and lack the privileges that physicians enjoy, as is the case in most developing nations⁽⁷⁾. In recent decades, significant issues have evolved within the pharmacy profession, necessitating the enhancement of pharmacists' patient-centered clinical role. Clinical pharmacy tasks, obligations, and services are firmly established in developed-country healthcare systems, although they are unfortunately not properly stated in many advanced contexts⁽⁴⁾. Collaborative practice models, such as pharmaceutical therapy management, have been implemented in industrialized nations as frameworks in which pharmacists interact with patients, physicians, and other healthcare providers to deliver team-based care to patients, resulting in improved health outcomes^(8, 9). On the other hand, pharmacists in other countries like Kuwait have been striving to expand their scope of practice to include direct patient care roles⁽¹⁰⁾. Previous studies showed that pharmacists in Arab countries facing several obstacles in their work that negatively impacted their satisfaction.^(7, 11, 12) As an example of these barriers in Kuwait, the most important challenges were inadequate staffing, insufficient pharmacist time, a lack of healthcare policy to promote pharmacists' role in patient care, and poor cooperation among healthcare workers⁽¹³⁾. In Sudan, pharmacists face many challenges, some of them related to themselves, such as personal characteristics, and others related to clinical pharmacy practice, such as a lack of information

sources and resistance from doctors to pharmacists' involvement in prescribing⁽¹⁴⁾.

The critical role that pharmacists play in the healthcare system necessitates close monitoring of their supply, distribution, and competencies⁽⁶⁾. The present study aimed to explore the professional challenges and obstacles facing Iraqi pharmacists working in public hospitals as well as create relevant recommendations for professional development.

Method

Study design and setting

The qualitative studies produce abundant data and are well suited for exploratory purposes in under-researched areas like this one. The interview guide was checked by experts in the field before using⁽¹⁵⁾. This qualitative study was conducted in Karbala province and adopted audio-recorded, semi-structured interviews with an open-ended question in their workplaces. The interviews were conducted between December 2022 and April 2023, and their purpose was to explore and identify the challenges facing hospital pharmacists in Iraq.

Participants and sampling strategies

In this study, two methods of sampling were used: purposive and snowballing. Initially, the researcher used the purposive technique to target pharmacists in public hospitals in order to identify pharmacists with adequate experience. In addition, the researcher used a snowball strategy, which included asking participants about additional pharmacists who were interested in participating and met the inclusion criteria.

The study recruited pharmacists with ≥ 3 years of experience working at governmental hospitals in Karbala province. Many characteristics were considered, including gender, position, job experience, their qualifications, and departments within hospitals. They were representing different experiences and daily professional challenges within the hospital, including drug stores, inpatient pharmacies, outpatient pharmacies, clinical pharmacies, and other pharmacy facilities like the procurement committee.

Procedure

The pharmacists were interviewed by the researcher, who was an experienced pharmacist with 13 years of practice experience. Semi-structured in-person interviews with open-ended questions were conducted with hospital pharmacists. The interviews were conducted at their workplaces and were between 30 and 60 minutes long. The interviews were audio-recorded. The interview questions were done in English, while the answers can be either in English or Arabic to overcome the language barrier. The recorded audio was transcribed verbatim. Finally, the transcripts were translated into English by bilingual researchers (the researcher and the supervisor). A semi-structured interview protocol

was developed from an extensive literature search and consultations with experts (experienced pharmacists). After the saturation point had been reached, the interviews were stopped⁽¹⁶⁾. Saturation means that no additional data is being found⁽¹⁷⁾.

Ethical approval

The study proposal was approved by the Central Scientific Committee of the University of Baghdad College of Pharmacy and also by the Center of Training and Research in Karbala Health Directorate. The Center of Training and Human Development in Karbala Health Directorate provided a permission letter no. 3200 on 23/12/2022. University of Baghdad College of Pharmacy granted an approval letter no. 7923 on 20/12/2022. All participants were informed about the study objectives at the beginning of the interview. Before the interviews were conducted, verbal permission was obtained from the participants. Participation was voluntary, and recording the interview was optional. To maintain participant anonymity, the interviews were unidentified (e.g., the interview did not include the participants' names). The participants received no reward.

Thematic data analysis

The qualitative data obtained from the interviews was analyzed using thematic analysis. The researcher gathered qualitative data from the participant's responses to discover and develop themes. Braun and Clarke's (2006) six steps for thematic analysis were followed by the researchers⁽¹⁸⁾. These steps include becoming familiar with the data (the comments), making initial codes, looking for themes, evaluating themes, defining and labeling themes, and writing the report.

Results

Thirty-two pharmacists (21 men and 11 women) from five public hospitals (Imam Al-Husain medical city 12, Imam Al-Hasan Al-Mujtaba 7, Al-Hindiya 6, Karbala for children 3, and Obstetrics and Gynecology: 3) were interviewed. They have a variety of experiences (24 pharmacists in clinical pharmacy, 14 in drug store, 12 in outpatient pharmacy, 11 in procurement committee, and 9 in Inpatient pharmacy) with years of experience range from 3.5 to 27 years. Table 1 shows the demographics characteristics of the participating pharmacists.

Table 1. The Professional characteristics of the participating pharmacists.

Code	Gender	Total years of experience	Previous experience				
			Clinical pharmacy	Drug store	Outpatient pharmacy	Procurement committee	Inpatient pharmacy
Ph. 1	Female	3.5	✓		✓		
Ph. 2	Female	13	✓				
Ph. 3	Female	9	✓				
Ph. 4	Male	5	✓				
Ph. 5	Male	9	✓				
Ph. 6	Male	6	✓	✓	✓		
Ph. 7	Male	4	✓	✓			
Ph. 8	Male	4	✓				
Ph. 9	Female	5	✓	✓			✓
Ph. 10	Male	5	✓	✓			✓
Ph. 11	Female	8	✓				✓
Ph. 12	Male	7	✓	✓	✓	✓	✓
Ph. 13	Female	10	✓	✓			✓
Ph. 14	Female	9	✓				
Ph. 15	Male	13	✓				
Ph. 16	Male	20	✓	✓	✓	✓	
Ph. 17	Female	22	✓				✓
Ph. 18	Male	20	✓	✓		✓	✓
Ph. 19	Male	25		✓			
Ph. 20	Male	21		✓	✓	✓	✓
Ph. 21	Male	4		✓	✓	✓	
Ph. 22	Male	11	✓	✓	✓	✓	✓
Ph. 23	Male	15				✓	
Ph. 24	Female	5	✓		✓		✓
Ph. 25	Male	17				✓	

Continued table 1.

Code	Gender	Total years of experience	Previous experience				
			Clinical pharmacy	Drug store	Outpatient pharmacy	Procurement committee	Inpatient pharmacy
Ph. 26	Male	15	✓		✓	✓	
Ph. 27	Female	9			✓		✓
Ph. 28	Male	17		✓			
Ph. 29	Male	5	✓		✓		
Ph. 30	Male	5.5	✓		✓	✓	
Ph. 31	Male	7	✓	✓			
Ph. 32	Female	27				✓	

The study found that there are many challenges facing Iraqi hospital pharmacists, some of which are related to the pharmacists themselves, while others are related to suboptimal organizational conditions,

an unfriendly hospital environment, inadequate technology and tools, and task issues. Figure 1 shows the main themes and sub-themes that were generated from the pharmacists' interviews.

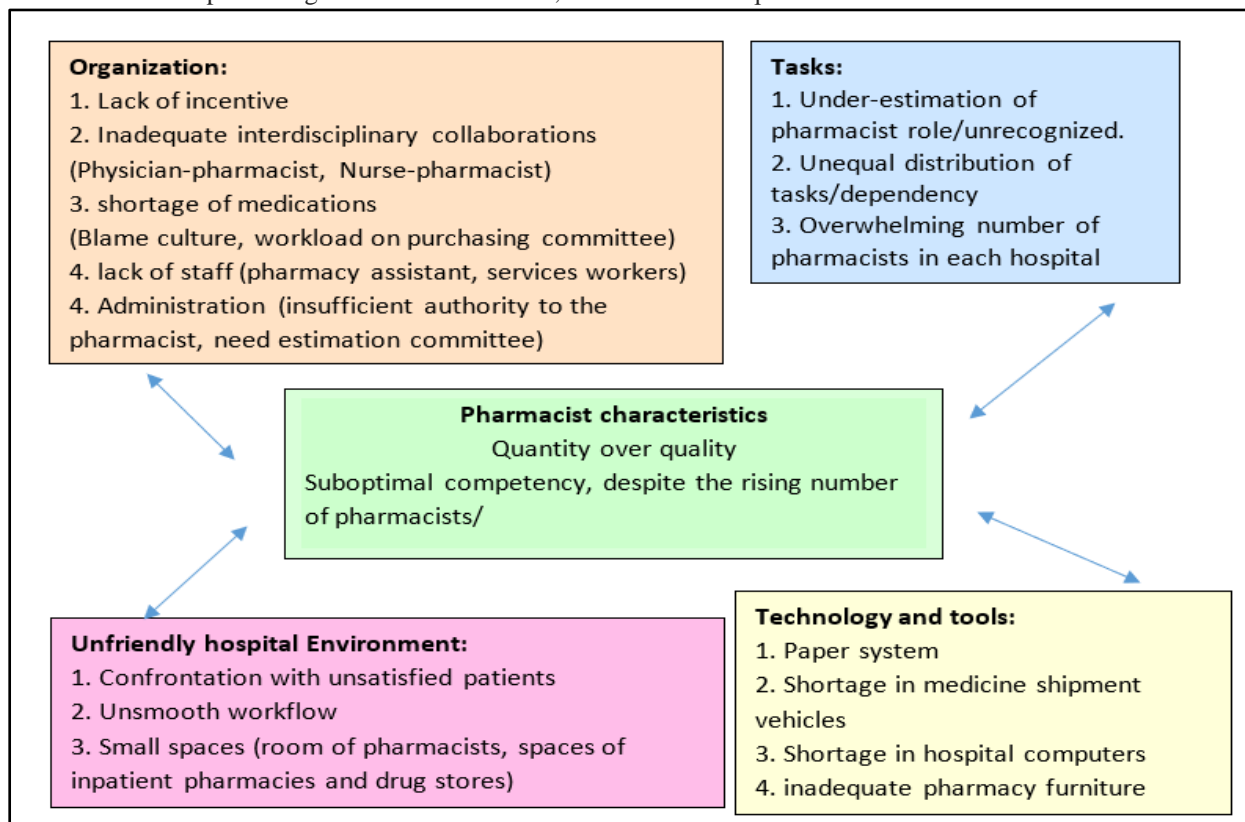


Figure 1. The main themes and sub-themes of the professional barriers in hospitals

Quantity over quality

This theme indicates that there are currently a large number of pharmacists in public hospitals, but unfortunately, they have suboptimal competency in general.

Suboptimal competency (N = 25)

Twenty-five participants stated that there are many numbers of hospital pharmacists, but most of them have inadequate practical competency.

"During my work in the drug store, I noticed an extreme lack of qualified staff with a large number of pharmacists" (Ph. 10).

"When I worked in the gynecology ward in 2014, each of ours dealt with 15 patients, and the work was done precisely and smoothly. Today, when one pharmacist deals with only five patients, they are unable to accomplish their tasks". (Ph8).

Eleven out of 32 participants stated that the pharmacists need to improve their performance as part of the healthcare team.

"The pharmacists do not take their real role in the hospital seriously " (Ph. 15). "Most pharmacists prefer to walk by the wall and rely on what the specialist writes without follow-up" (Ph. 12).

Suboptimal organizational conditions

The participants mentioned various organizational challenges that pharmacists face including **Lack of incentives**, insufficient multidisciplinary interactions (physician-pharmacist and nurse-pharmacist) and shortage in medicines and their consequences, which interact with and impact pharmacists' work in hospitals.

Lack of incentives to improve their work and knowledge**There is no financial recognition for hard working pharmacists in public hospitals.**

"Administratively and legally, the diligent pharmacists and the incompetent pharmacists are handled equally" (Ph. 31).

"There are no financial incentives or penalties for work and intellectual progress." (Ph. 18).

Inadequate physician-pharmacist professional collaborations: (N=22)

Most pharmacists said that physicians undervalue and neglect to join regular important meetings with pharmacists such as the Pharmacy and Therapeutic Committees and the Need Estimation Committees. Consequently, they fail to agree on working protocol for providing and dispensing medicines.

"Because the physicians' heads of departments do not attend the monthly meeting of the Pharmacy and Treatment Committee, it is impossible to find a solution to problems related to scarce, missing, and surplus medicines, as well as estimation of medicines for procurement to the hospital" (Ph. 12).

In terms of embracing the pharmacist's recommendations, the results show that certain specialists are steadfast in their beliefs, especially in the drug-drug interaction aspect.

"The pharmacists write their notes on their own form, but 70% of the specialists are not interested in reviewing them". (Ph. 6)

while other physicians welcome the pharmacist's recommendations with open arms.

"During my work with physicians in the oncology ward, I did not face any difficulty, as they often welcomed the pharmacists' recommendations and made them decision-makers". (Ph.5)

In outpatient pharmacy, pharmacists complain about physicians writing irregular paper prescriptions, such as unclear handwriting, in addition to not adding the diagnosis.

"One of the most significant challenges in outpatient pharmacy is the physician's failure to follow the regulations for writing the paper prescription, such as unclear handwriting, absence of diagnosis, or prescribing medications out of the approved list, (such as diclofenac gel or Flu-out tab)". (Ph. 16)

On the other hand, in clinical pharmacy, the biggest obstacle facing the pharmacists is the absence of the specialist in the morning tour, leaving the patients' follow-up prescriptions without a stamp.

"The specialist's stamp is missing from the patient's follow-up records, despite hospital regulations stating that no dispensing should be done without the specialist's stamp." In this case, the pharmacist is caught between the patient and the administration." (Ph. 29).

Suboptimal nurse-pharmacist professional collaborations

The majority of participants (N = 18) felt that the pharmacist-nurse relationship should be improved.

"Through my personal experience with nurses, I noticed that they constantly compare themselves to pharmacists and believe that they are better and that their position is more essential than the pharmacists. Yes, they play a significant function, but each of them is essential" (Ph. 14).

"There is dissatisfaction and sensitivity among nurses regarding pharmacists" (Ph. 29).

However, some pharmacists believe there is good professional collaboration between nurses and hospital pharmacists (N = 8).

"The nurse personnel on the cardiopulmonary resuscitation unit were highly helpful and great at collaboration with physicians and pharmacists. We learn from each other's." (Ph. 17).

Consequences of a shortage in medications

The vast majority of participants (27/32) stated that there was a shortage of medications in public hospitals, particularly in life-saving ones.

"There is a severe shortage in life-saving medicines; e.g., rabies and tetanus vaccines are not currently available." Most of the life-saving medications are not available, and we cannot buy them because they have not been tested (Ph. 7).

"When patients are preparing for a surgery, they may be astonished to find that most medications are not available in the hospital. They are asked to purchase them from the private sector (outside the hospital). Sometimes even folly catheters, hernia mesh, or dialysis fluids, which are vital medical supplies, are not available in the hospital" (Ph. 2).

This issue has many consequences for the pharmacists and their jobs, all of which have a negative impact on the pharmacists, patients, and workflow. The most important of which is summarized by: blaming and accusing the pharmacist of impeding the patient's receipt of medication, which leads to confrontation between the patient and the pharmacist and may induce frustration and have a detrimental impact on the work's outcome.

"The first person to be blamed is the pharmacist, who confronts the patients directly and is subjected to the usual questions from the patients, such as Why is this treatment not available? Why do we buy it from outside the hospital?" (Ph. 15)

Furthermore, the shortage in medications imposed an additional burden on the pharmacists working in the hospital procurement committee.

"KIMADIA supplies 50% of medicines while the hospital purchases 50% of the needed medications (Ph. 31).

"The hospital Purchasing Committee takes up the challenge to secure 98% of medical supplies, such as syringes of all sizes, IV fluid sets, and much more" (Ph. 19)

Unfriendly hospital environment

All the participating pharmacists agreed that they work in a hostile and negative work environment within the hospital. They were summarized by small spaces for rooms allocated to the pharmacy division and pharmacists and unsmooth workflow.

Small spaces for rooms allocated to the Pharmacy Division and pharmacists

Half of the participants revealed that there are insufficient rooms for clinical pharmacists inside the wards as well as the small spaces of the drug stores, outpatient pharmacies, and inpatient pharmacies.

"The space of the drug store is quite small; initially there was no specific room for the drug store at this hospital, but it has been created" (Ph. 22).

The unsmooth workflow in hospitals

Twenty-nine participants stated that there are many obstacles and complex procedures that impede hospital workflow and add an additional burden to pharmacists as well as patients, such as those related to procurement committees and paper prescriptions for outpatients.

The complex routine procedures in procurement transactions (N = 7)

The medication procurement committee faces several bureaucratic obstacles.

"There is a lethal bureaucracy in place to perform transactions that involve several registrations from many entities, each with its own set of requirements. For example, to purchase paracetamol, we need at least two months to finish the transaction, which is nonsensical when compared to any private hospital, which can supply it with just one phone call" (Ph. 12).

Tedious validation process for paper prescriptions (N = 10)

Ten of the participants explain that pharmacists at outpatient pharmacies face a complex process since each paper prescription must contain three stamps in addition to many directions.

"The pharmacists have no authorization to dispense the irregular paper prescriptions. This circle of misery between the pharmacist, physician, patient, and inspection committee is repeated on a regular basis until it becomes a daily routine". (Ph. 24)

"The inspection committees are not flexible in this respect, and they do not recognize the magnitude of the problem that we have with patients, as well as the number of patients that the pharmacy receives, which exceeds 1800 paper prescriptions per day" (Ph. 29).

Confrontation of hospital pharmacists with unsatisfied patients: (N = 15)

Fifteen pharmacists highlighted the problem that can face with angry patients particularly at outpatient pharmacy. The tedious regulations may expose pharmacists to embarrassment with tired patients.

"When the patients visit the hospital, they are intolerant towards all the medical staff. Some patients may behave aggressively, and this causes terror, especially for the female staff" (Ph. 6).

Task-related issues

According to the participant interviews, three subthemes were generated under the "tasks" related theme: underestimation of the pharmacist role, unequal distribution of tasks among hospital pharmacists, and the overwhelming number of pharmacists in each hospital.

Underestimation of the pharmacist's role in hospitals (N = 18)

More than half of the participants indicated that pharmacists play an unrecognized role in hospitals, especially those with drug dispensing role.

"The majority of health care providers are unaware of the processes underlying pharmacists' work and the amount of effort they expend, and administration fails to provide pharmacists with the appreciation they deserve" (Ph. 22).

"Nobody in the administration is aware of what the pharmacists endure in the drug store" (Ph. 31).

"In the drug dispensing outlets, we are like the unknown soldiers" (Ph. 27).

Unequal distribution of tasks among hospital pharmacists (N = 24)

The majority of participants demonstrated that some pharmacists don't work very hard, while others work beyond their capacities.

"The honorable pharmacists bear additional responsibility and burdens that exceed their capacities, abilities, and duties" (Ph. 18).

Overwhelming number of pharmacists in each hospital: (N = 27)

About three-quarters of the participants mentioned that there has been a huge increase in the number of pharmacists in hospitals without expanding the pharmacist duties. This may have a negative impact on their coordination.

"Increasing the number of pharmacists in the wards is very harmful (toxic); it creates dependence of some pharmacists on the others" (Ph. 5).

Inadequate technology and tools

The final theme of organization challenges facing the hospital pharmacist was the inadequate availability of the required technology and tools. Thirteen out of 32 participants revealed that there is a deficiency in hospital medicine shipment vehicles, inadequate pharmacy furniture, a shortage in computers, and the absence of an electronic record system.

"There is one small, non-refrigerated vehicle for medicine shipment in the entire hospital, which is sent two or three times a day; sometimes we use our personal cars to transport medicines and supplies to the hospital." (Ph.19)

All drug dispensing outlets do not have an electronic system, and there are not enough computers, as well as the absence of an official government internet system in the institution" (Ph. 22).

Discussion

Although there are many studies in Iraq that are related to a specific problem that pharmacists confront, this is the only study in Iraq that comprehensively and broadly addresses the challenges encountered by pharmacists in the hospital. The thematic analysis of the qualitative data collected from interviews of hospital pharmacists provides a variety of pharmacists' perspectives on challenges facing them, which are classified into challenges related to the pharmacist's characteristics, while others were concerned with organizational conditions such as inadequate interdisciplinary collaborations and shortages of medications. The unfriendly hospital environment and task issues are also concerns. These perspectives also included pharmacists' recommendations for overcoming current problems to improve their practice.

Suboptimal hospital pharmacists' competency

In this study, the vast majority of pharmacists mentioned that there is a noticeable limitation in the competency of pharmacist in public hospitals. This problem found in one study in Kuwait, which attributes it to the lack of pharmacists' interest in changing their practice⁽¹⁹⁾. Suboptimal pharmaceutical competency refers to occurrences and episodes that pharmacists regard as less than the ideal level of care for patients. Several factors such as time management and setting priority can improve pharmaceutical care⁽²⁰⁾.

Inadequate physician-pharmacist professional collaboration

In this study, some participants stated that there are inadequate professional collaborations between physicians and pharmacists, especially in relation to drug-drug interactions and poor physicians' handwriting. Cooperation and interactions between pharmacists and physicians can enhance patient clinical outcome⁽²¹⁾. An Iraqi study found 85% of medication errors occurred during the prescribing process⁽²²⁾. One study in the USA revealed that the main cause of fatal drug errors is a lack of teamwork and ineffective professional communication⁽²³⁾. Another Iraqi hospital study found that poor physician-pharmacist collaboration is associated with an incidence of prescribed medication errors of 6.57%⁽²⁴⁾. Inadequate pharmacist-physician communication has a detrimental impact on patient health outcomes⁽²⁵⁾. According to a study conducted in Iraq, there is a

modest collaboration between Iraqi pharmacists and physicians within hospitals, and pharmacists must work more to improve this collaboration⁽²⁶⁾. Similarly, a study in Sudan found that there is resistance from physicians to pharmacists' involvement in the patient's therapeutic plan⁽¹⁴⁾. A recent Iraqi study indicated that hospital physicians have more expectations from hospital pharmacist in terms of following-up patient medication safety, but unfortunately, they experience suboptimal collaboration⁽²⁷⁾.

Suboptimal nurse-pharmacist professional collaborations

This study revealed that the nurse-pharmacist professional relationship should be improved. The nurse-pharmacist collaboration is essential to promote patient medication safety because pharmacists have the best experience in pharmacokinetics and pharmacodynamics and are the most qualified health care providers to perform a medication regimen review. Two Iraqi studies showed that hospital pharmacists can minimize adverse drug events and enhance the clinical outcome of patients^(28, 29). Another study showed that the clinical pharmacist is readily accessible to answer nurse questions about medication administration⁽³⁰⁾.

Shortage in medications and workload on the procurement committee

This study stated that there is a shortage of medications, particularly life-saving ones, which has a negative impact on pharmacists, patients, and workflow. According to the Iraq Pharmaceutical Country Profile 2020, KIMADIA (the State Company for Medication Procurement) was able to secure only 60% of the essential medicines for the public healthcare settings in 2019. The insufficient budget allocated to KIMADIA is one of the main reasons for this shortage of essential medicines in Iraq in the past few decades⁽³¹⁾. To secure these missing essential medications, some hospitals buy these medications directly from medication scientific bureau in the private sector. In one study done in Armenia, 50% of its participants thought that there was a scarcity of medications needed to treat critical diseases, and 90.0% felt that strengthening the health care system through the implementation of strategies to control drug shortages was essential⁽³²⁾.

Confrontation of hospital pharmacists with unsatisfied patients

The current study revealed the unsatisfied behavior and angry attitude of some patients toward pharmacists due to unavailability of medicines. Patients' negative attitudes regarding pharmacy services were the most often mentioned obstacle in a study done in Ethiopia⁽³³⁾. Healthcare is challenged by old people, especially those with multi-morbidities who were treated with numerous

concurrent medications. Pharmacists are among the most accessible health care providers in terms of contact with patients, monitoring, and providing guidance to the general population⁽³⁴⁾. The patient load, appropriateness of the dispensing space, and lack of a regulatory framework to monitor and assess patient counseling practice were recurrent challenges for health facilities with rational dispensing barriers⁽³⁵⁾. A recent study in the Arab world found that pharmacists experience high level of stress when confront difficult patients⁽¹¹⁾.

Underestimation of the pharmacist's role in hospitals

Several participants in this study stated that the pharmacists were unable to perform their role adequately at the hospital as a member of the patient's care team. In hospital settings, where pharmaceutical safety and efficacy are crucial to patient care, pharmacists play a significant role. Pharmacists do medication reconciliation, drug interaction screening, and patient education in addition to administering prescriptions. They play an important role in encouraging rational medication usage, decreasing medication mistakes, and reducing adverse drug reactions⁽³⁶⁾. Several studies have demonstrated the value of pharmacists in hospital settings^(26, 28). It has been found that pharmacist-led medication reviews decreased drug-related complications, enhance medication adherence and hospital readmissions⁽³⁷⁾. An American study concluded that pharmacist interventions in drug management significantly decreased hospital stay length and healthcare expenses⁽³⁸⁾. By working together with other healthcare providers, pharmacists can help ensure pharmaceutical safety and efficacy in hospital settings, thereby improving patient outcomes and lowering healthcare costs⁽³⁹⁾.

In this study, some participants stated that pharmacists play an unrecognized role in hospitals. A recent literature review that examined the roles of pharmacists in preventing medication errors in hospitals recommended that it is essential that hospitals recognize and support the critical role of pharmacists in medication safety by providing them with appropriate resources, ongoing education and training, and sufficient staffing levels⁽⁴⁰⁾.

This study had limited to one province. However, we believe that hospital pharmacists across the country experience similar challenges due to similar poly and work environment.

Conclusions

The study revealed that there are several unpleasant challenges facing hospital pharmacists which can impact their quality of work. As pharmacist role in hospital is pivotal for patient clinical outcome, more efforts are needed to boost pharmacist practical/clinical competency, provides better organization environment, enhance

interdisciplinary professional collaborations, and secure essential medicines technology.

Funding

No funding was received for this study.

Ethics Statements

The Ethical Committee at the University of Baghdad College of Pharmacy approved the study proposal.

Conflict of Interest

None

Author Contributions

AAA conceptualized the idea of this study. AAA and ZMN contributed to design of the project and interview guide. ZMN conducted the interviews and the analysis of the qualitative data. ZMN drafted the first version of the manuscript. AAA revised the analysis and whole manuscript. Both authors were involved in the revision and approval of the final manuscript.

References

1. Al-Jumaili AA, Al-Fatlawi BG, Al-Jalehawi AK, Al-Hamadani FY, Alsawad OS. Impact of COVID-19 pandemic on healthcare providers: save the frontline fighters. *International Journal of Pharmacy Practice*. 2021;29(4):369-75.
2. Alaa AlAlwan M. Health Situation in Iraq: Challenges and Priorities for Action. In: Iraqi Ministry of Health M, editor. Baghdad: Ministry of Health; 2019.
3. Mshiemish BA. Role of the Clinical Pharmacist in Reducing Preventable Adverse Drug Events *Iraqi J Pharm Sci*, Vol.20(2) 2011.
4. Saseen JJ, Ripley TL, Bondi D, Burke JM, Cohen LJ, McBane S, et al. ACCP Clinical Pharmacist Competencies. *Pharmacotherapy*. 2017;37(5):630-6.
5. Alabid AH, Ibrahim MI, Hassali MA. Do Professional Practices among Malaysian Private Healthcare Providers Differ? A Comparative Study using Simulated Patients. *Journal of clinical and diagnostic research : JCDR*. 2013;7(12):2912-6.
6. Al-Jumaili AA, Hussain SA, Sorofman B. Pharmacy in Iraq: history, current status, and future directions. *Am J Health Syst Pharm*. 2013;70(4):368-72.
7. Al-Jumaili AA, ZAM, Mohammed Jamal Yawuz, Kawther Khalid Ahmed. Exploring Work Satisfaction and Characteristics of Iraqi Pharmacist Workforce. *Brazilian Journal of Pharmaceutical Sciences*. 2022;58: e19929
8. Bluml BM. Definition of medication therapy management: development of professionwide consensus. *Journal of the American Pharmacists Association : JAPhA*. 2005;45(5):566-72.
9. Martins RR, Silva LT, Lopes FM. Impact of medication therapy management on

- pharmacotherapy safety in an intensive care unit. *International journal of clinical pharmacy*. 2019;41(1):179-88.
10. Katoue MG, Awad AI, Schwinghammer TL, Kombian SB. Pharmaceutical care education in Kuwait: pharmacy students' perspectives. *Pharmacy practice*. 2014;12(3):411.
 11. Al-Jumaili AA, Sherbeny F, Elhiny R, Hijazi B, Elbarbry F, Rahal M, et al. Exploring job satisfaction among pharmacy professionals in the Arab world: a multi-country study. *International Journal of Pharmacy Practice*. 2022;30(2):160-8.
 12. Al-Jumaili AA, Elhiny R, Thomas D, Elbarbry F, Khdour M, Sherbeny F, et al. Factors impacting job satisfaction among pharmacists in the Arab world: A qualitative study. *Saudi Pharmaceutical Journal*. 2023;31(4):578-84.
 13. Katoue MG, Awad AI, Schwinghammer TL, Kombian SB. Pharmaceutical care in Kuwait: hospital pharmacists' perspectives. *International journal of clinical pharmacy*. 2014;36(6):1170-8.
 14. Elsadig H, Weiss M, Scott J, Laaksonen R. Exploring the challenges for clinical pharmacists in Sudan. *International journal of clinical pharmacy*. 2017;39.
 15. Amin MEK, Nørgaard LS, Cavaco AM, Witry MJ, Hillman L, Cernasev A, et al. Establishing trustworthiness and authenticity in qualitative pharmacy research. *Research in Social and Administrative Pharmacy*. 2020;16(10):1472-82.
 16. Hennink M, Kaiser BN. Sample sizes for saturation in qualitative research: A systematic review of empirical tests. *Social Science & Medicine*. 2022;292:114523.
 17. Saunders B, Sim J, Kingstone T, Baker S, Waterfield J, Bartlam B, et al. Saturation in qualitative research: exploring its conceptualization and operationalization. *Quality & Quantity*. 2018;52(4):1893-907.
 18. Braun V, Clarke V. Using thematic analysis in psychology. *Qualitative Research in Psychology*. 2006;3(2):77-101.
 19. Katoue MG. Enablers and challenges to pharmacy practice change in Kuwait hospitals: a qualitative exploration of pharmacists' perceptions. *Journal of evaluation in clinical practice*. 2021;27(2):272-9.
 20. McLean A, Paudyal V, Cunningham S, Stewart D. Hospital clinical pharmacists' perspectives on suboptimal pharmaceutical care: a qualitative study. *Research Square*; 2023.
 21. Brock KA, Doucette WR. Collaborative working relationships between pharmacists and physicians: an exploratory study. *Journal of the American Pharmacists Association : JAPhA*. 2004;44(3):358-65.
 22. Darya Omed Nori TAA, Saad Abdulrahman Hussain. Medication errors in pediatric hospitals. *American Journal of Pharmacy and Pharmacology*. 2014;1(4):56-61.
 23. al-Shaqha WM, Zairi M. Pharmaceutical care management: a modern approach to providing seamless and integrated health care. *International journal of health care quality assurance incorporating Leadership in health services*. 2001;14(6-7):282-301.
 24. Al-Jumaili AA, Jabri AMH, Al-Rekabi MD, Abbood SK, Hussein AH. Physician Acceptance of Pharmacist Recommendations about Medication Prescribing Errors in Iraqi Hospitals. *INNOVATIONS in pharmacy*. 2016;7(3):1-9.
 25. Gallagher RM, Gallagher HC. Improving the working relationship between doctors and pharmacists: is inter-professional education the answer? *Advances in health sciences education : theory and practice*. 2012;17(2):247-57.
 26. Al-Jumaili AA, Al-Rekabi MD, Doucette W, Hussein AH, Abbas HK, Hussein FH. Factors influencing the degree of physician-pharmacist collaboration within Iraqi public healthcare settings. *Int J Pharm Pract*. 2017;25(6):411-7.
 27. Fahmi HL, Al-Jumaili AA, Younus MM. The whole experience of public hospital physicians from several specialties with biopharmaceutical effectiveness, safety, adverse drug reactions and interchangeability: A qualitative study. *Exploratory Research in Clinical and Social Pharmacy*. 2022;7:100162.
 28. Abbood SK, Assad HC, Al-Jumaili AA. Pharmacist intervention to enhance postoperative fluid prescribing practice in an Iraqi hospital through implementation of NICE guideline. *Pharmacy practice*. 2019;17(3):1552.
 29. Jabri AM, Assad HC, Al-Jumaili AA. Pharmacist role to enhance the prescribing of hospital discharge medications for patients after heart attack. *Saudi pharmaceutical journal : SPJ : the official publication of the Saudi Pharmaceutical Society*. 2020;28(4):473-9.
 30. Al-Jumaili AA, Abbood SK, Abbas AN, Rafaeel HM, Mohammed FR, Ali AZ. Organization factors influencing nurse ability to prevent and detect adverse drug events in public hospitals using a patient safety model. *Saudi pharmaceutical journal : SPJ : the official publication of the Saudi Pharmaceutical Society*. 2021;29(10):1216-22.
 31. Al-Jumaili AA, MMY, Yasmine J.A. Kannan, Zinah E. Nooruldeen, Adi Al-Nuseirat. Pharmaceutical regulations in Iraq: from medicine approval to post-marketing. *East Mediterr Health J*. 2021;27(doi.org/10.26719/emhj.21.025).
 32. Vardanyan L, Kazaryan I, Sevikyan A, Amirkhanyan A. Falsified medicines and

- shortage as urgent challenges in health care. *European Journal of Public Health*. 2021;31(Supplement_3).
33. Yimer YS, Mohammed SA, Hailu AD. Patient-Pharmacist Interaction in Ethiopia: Systematic Review of Barriers to Communication. Patient preference and adherence. 2020;14:1295-305.
 34. Al-Hasani N, Kadhim D, Al-Jumaili AA. Exploring the role of community pharmacists in preventing the onsite infection during COVID-19 pandemic. *Pharmaceutical Sciences Asia*. 2022;49:169-79.
 35. Naughton CA. Patient-Centered Communication. *Pharmacy* (Basel, Switzerland). 2018;6(1).
 36. Kehrer JP, Eberhart G, Wing M, Horon K. Pharmacy's role in a modern health continuum. *Canadian pharmacists journal : CPJ = Revue des pharmaciens du Canada : RPC*. 2013;146(6):321-4.
 37. Stanton-Robinson C, Al-Jumaili AA, Jackson A, Catney C, Veach S, Witry MJ. Evaluation of community pharmacist-provided telephone interventions to improve adherence to hypertension and diabetes medications. *Journal of the American Pharmacists Association : JAPhA*. 2018;58(4s):S120-s4.
 38. Hudd TR. Emerging role of pharmacists in managing patients with chronic obstructive pulmonary disease. *American Journal of Health-System Pharmacy*. 2020;77(19):1625-30.
 39. Al-Musawi M, Anwer Z. Evaluating the Impact of Pharmacist Counselling for Asthmatic Children at Karbala Teaching Hospital for Children: An Interventional Prospective Study (Conference Paper)#. *Iraqi Journal of Pharmaceutical Sciences* (P-ISSN: 1683 - 3597 , E-ISSN : 2521 - 3512). 2022;30:22-30.
 40. Gupta Y, Kumar N, Shukla A, Rai V. Assessment of the Role of Pharmacists in Preventing Medication Errors in Hospital Settings. *Journal for Research in Applied Sciences and Biotechnology*. 2023;2:212-8.

