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EVALUATION OF COMMUNITY PHARMACIST DISPENSING AND COUNSELLING PRACTICE

LINA ELTAIB*, MD ALI MUJTABA, DALIA AMIR AND HIND RIKABI

Department of Pharmaceutics, Faculty of Pharmacy, Northern Border University, Rafha, Kingdom of Saudi Arabia

***Corresponding Author: E Mail: linasalaheldin@gmail.com; Mobile: +966505369495; Office Extn. No- 5862**

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ABSTRACT

Background:

There is a great deal of concern surrounding the dispensing practices; a majority of studies conducted in the KSA indicated that the risk of dispensing errors was increasing.

Objectives: To evaluate the dispensing practices of community pharmacists in Rafha - Northern border region

Methods: The data was collected by the researchers with a designed pretested interview questionnaire. Shadowing enabled the researcher to understand the user's perspective.

Results: Only 26% and 23% of the study participants had received training in the last three years. Only 3% of the participants work with supervision or help during their 8- to 12-hour shifts.

In total, 77% of the respondents agreed that clear self-checking routines were not implemented, and their main source of information was experience.60% (n=167) of the respondents did not know the purpose of the specific medicine they had been prescribed. Only 16% of the participants received information regarding their medications. All pharmacists dispensed thyroxin and multivitamins with iron- without a prescription or counselling.

Conclusion: The study highlighted the need to offer continuing medical training programmes for community pharmacists, focusing mainly on good dispensing practices and patient counselling.

Keywords: Dispensing, community pharmacy, counselling- practice

INTRODUCTION

Community pharmacies are responsible for providing pharmaceutical care and patient counselling services to the public. The WHO guideline defines dispensing as reviewing and preparing a prescription with packaging and labelling, recording the transaction, and transferring the prescribed medicines with counselling to a patient or caregiver. The pharmacist should ensure that the prescription is valid and clinically correct for the patient and provide information to the patient or caregiver to ensure proper use of the medicine. However, dispensing practices in the Kingdom of Saudi Arabia (KSA) do not adhere to this standard, according to earlier studies.[1-3] Following good dispensing practice guidelines would aid people involved in dispensing medicines and improve the quality of pharmaceutical care.[4]The professional role of pharmacists is not well established because patient behaviour while purchasing medicine from pharmacies is similar to that observed when they are buying food from the supermarket.[5]People consider community pharmacists to be medicine traders. Thus, community pharmacies have become the preferred destination for those seeking healthcare for general ailments.[6,7] Furthermore, consultation at a pharmacy is easier and less expensive than in a clinic.[8] The staff dispensing medicines need to be trained and equipped with the.technical know ledge and the skills necessary to dispense me -dicines and to communicate with patients/ caregivers.

The main aim of the current study was to assess the dispensing practices of community pharmacists in the Rafha Northern border region to identify and make recommendations via coordinated and effective mechanisms to respond to an alert key audiences, including stakeholders, the public and regulatory bodies, about the importance of implementing good dispensing practices that comply with the international recommendations and guidelines.

LITERATURE REVIEW

There is a great deal of concern surrounding the dispensing practices in the KSA; a majority of studies conducted in the KSA indicated that the risk of dispensing errors was increasing. Earlier in 1978, a law was passed regulating pharmaceutical practices in the KSA. The law demanded professionalization and precluded the dispensing of medications by persons other than pharmacists.[9] Furthermore, a pharmacist is required to ask for a prescription for all dispensed drugs unless the drug is included

in the national OTC list.[10] This is a pressing issue, as an earlier study found that more than eighty percent of pharmacies dispensed antibiotics (prescription-only drugs) without prescriptions.[11] Unfortunately, a study conducted by S.Bawazeir in Riyadh in 1992 showed that more than thirty-five percent of medications dispensed over-the-counter were prescription-only medicines.[10] These findings shed light on possible misuse of prescription-only drugs by patients, particularly because no appropriate actions were taken at the time to remedy the situation. Pharmacists should have sufficient knowledge of the medications to provide adequate counselling to patients.[12] A study by Garcia assessed the counselling practices in Riyadh City and revealed that pharmacists do not provide appropriate patient counselling.[13]Furthermore, a previous study showed that 95% of pharmacists do not adhere to the regulations related to antimicrobial dispensing and patient counselling.[14]

Despite the failure of 98.9% of pharmacists to adhere to good dispensing guidelines, studies have not concluded that the pharmacists are abusing their patients.[15] unfortunately, this can lead to further neglect of the guidelines. In one study,[16] hospital pharmacies in Riyadh City were found to have well-developed dispensing practices and administration services. Further enhancement is possible using new technologies such as automated medication distribution technologies, barcode technology and unit dose drug distribution systems.

According to the new pharmacy model for 2030 in the KSA, some prescriptions currently dispensed by hospital pharmacies, including prescriptions given at all hospitals, ambulatory care clinics, and outpatient surgical clinics, should be switch to being dispensed by community pharmacies over the course of 1-3 years and should be connected by a computerized system with electronic patient medical records.[17]

Research Methodology

The responsible pharmacist in each pharmacy was interviewed before and after the data were collected. Observations were conducted using the pre-tested questionnaire and consisted of two or three visits to each pharmacy. All researchers reflected on the data collection process in a written format due to the busy nature of community pharmacies and the need for the researchers to avoid interfering with the activities of the pharmacy. Shadowing was conducted at the beginning of the work day to enable the researcher to see the user's perspective. A

group of investigators (pharmacy students) went to the 35 community pharmacies asking for thyroxin and multivitamins with iron without prescriptions.

Research Design

This was a cross-sectional prospective study carried out in community pharmacies in the Northern border region of the KSA.

Data Analyses

The collected data were tabulated, classified, and analysed using a statistical software programme.

Ethical Considerations

The entire study population was clearly informed about the academic purpose of the study. The data provided will not be used in any way to support a decision harming them.

RESULTS

Demographic Characteristics of Study Participants (n= 35 Pharmacist)

In total, 37 community pharmacists agreed to participate and answer the questionnaire. After the exclusion of 2 participants with incomplete questionnaires, the total sample who met all the inclusion criteria consisted of 35 participants.

All the participants were male (100%) because females are not allowed to work in this field (community pharmacy) Majority.

The majority (51%) of participants' ages ranged between 21 and 30 years. Of the participants, 97% had a university education and 3% had a Pharm D. Rafha was the residential area for 71% of the study participants (Table 1).

Dispensing Practices in Community Pharmacies (no=35)

Most of the pharmacies (91%) appeared clean and tidy in terms of the environment and medication refrigerator. In total, 80% of the pharmacies reported that the temperature of the pharmacy was checked regularly and maintained within an acceptable range. When the participants were asked whether the dispensed medicines were checked by second staff member before being given to the client, 94% reported that they usually were not checked. Only 29% reported that the prescriptions were cross-checked with regard to patient name at the point of receipt.

Fewer than half of the participants (37%) reported using an official checklist to perform internal inspections in the pharmacy. Regarding standard operating procedures (SOPs) for medication dispensing and counselling; only 24% reported that they had SOPs. When the participants were asked about receiving training during the last 3 years (dispensing or patient counselling about adverse drug reactions (ADRs) and antimicrobial resistance (AMR)),only 26% and 23%, respectively, of the study

participants answered in the affirmative (Table 2).

Pharmacist Qualifications and Training

Pharmacists with a pharmacy degree working a full shift alone without supervision or help accounted for 97% of the participants, while only 3% had a Pharm D degree. Furthermore, only 3% of the participants worked with supervision or help during their 8- to 12-hour shift (Table 3a).

Pharmacists' Sources of Information versus Individual Practice: The Quality of Medication Counselling (n=35)

In total, 77% of the respondents agreed that clear self-checking routines regarding accurate dosage calculation, the choice of medicines and appropriate labelling were not implemented, and their main source of information was experience (40%). On the other hand, 23% agreed that there were clear self-checking routines regarding accurate dosage calculation, the choice of medicines and appropriate labelling, most of which (11%)involved the Internet and online applications. Fifty-four percent of participants agreed that low-quality advice was given to patients, and 46% stated that high-quality advice was given to patients; 34% used the Internet and online applications as sources of information, while 26%relied on their own experience. A total of 72% (n=29) of respondents agreed that patients were able to repeat and remember vital instructions; 49% of that 72%relied on their experience; furthermore, 28% (n=6) reported that patients repeated and remembered vital instructions, and most of the 28% (16%) used the Internet and online applications as sources of information.

When asked about the substitution of generic medications for brand-name medications, the main sources of information used were the Internet and online applications. Only 60% (n=21) of the respondents substituted generic products for brand-name products, while the remaining 40% (n=14) did not substitute generic products for brand-name products. Twenty percent (n=8) of the respondents agreed that a list of OTC medications was available in the pharmacy, while 80% (no.=27) did not agree that an OTC medication list was available in the pharmacy, and most (43%) relied on their own experience. The answers of the respondents are shown in (Table 3b).Demographic Characteristics of Participants

In total, 287 pharmacy clients agreed to complete the questionnaire. After excluding 8 with incomplete questionnaires, the total sample population that met all inclusion criteria was 279 participants.

Among the participants, females represented more than half (70%) of the study group, while males represented less than half (30%) of the study population. The majority (78%) of participants' ages ranged between 21 and 30 years. Of the participants, 58% had a university education, and 43% had an elementary education. Rafha and Arar Cities represented the residential areas for 75% and 18%, respectively, of the study participants (Table 4).

Patient Knowledge of Prescribed Medicines

The majority (60%,n=167) of the respondents did not know the purpose of the specific medicine, although 68% of the respondents knew the name of their medicine. Only 54% of the respondents agreed that they knew how long to take prescribed medicine, and only 19% knew how long to take an OTC medicine. When the respondents were asked about receiving other information about the medicine (including possible ADRs), only 16% agreed, while 84% disagreed. A total of 68% of the respondents agreed that the amount of time spent communicating about the medication was not satisfactory. It is noteworthy that 65% reported that the prescribed medications were adequately labelled. (Table 5)

Pharmacist Responses When Asked to Dispense (Thyroxin and Multivitamins) Without Prescription:

All of the pharmacists (100%) in community pharmacies included in this study dispensed thyroxine and multivitamins without prescriptions and without patient counselling (Table 6).

Table 1: Demographic characteristics of study participants, (n= 35 pharmacist)

Variable	Categories	Frequency	Percentage (%)
Sex	Male	35	100
	Female	0	0
Age	18-20 years	0	0
	21-30 years	18	51
	31-40 years	10	29
	41-50 years	6	17
	50-60 years	1	3
Residence area	Arar	5	15
	Rafha	25	71
	Other	5	14
Education	University education Bachelor of pharmacy	34	97
	University education Bachelor of pharmacy Pharm D	1	3
	Master or doctorate	0	0

Table (2): Dispensing in community pharmacy (no=35)

No.	Question	Yes	No
	Environment:		
1.	Does the area appear clean and tidy?	91%	9%
2.	Is the refrigerator clean and tidy?	91%	9%
3.	Is the temperature of the pharmacy checked regularly and maintained within an acceptable range?	80%	20%
	General procedures:		
4.	Are all dispensed medicines checked by second staff member before issue?	6%	94%
5.	What proportion of prescriptions is cross checked for patients name at the point of receipt?	29%	71 %
6.	Is there an official checklist for carrying out internal inspections?	37%	63%
	Dispensing training:		
7	Are SOPs for dispensing and medication counseling available?	14%	86%
8	Did pharmacist receive training for the last 3 years in dispensing or patient counseling?	26%	74%
9	Did pharmacist receive training for the last 3 years in ADRs and AMR?	23%	77%

Table (3.a): Pharmacist qualifications and training (no=35)

Indicator	Working full shift alone without supervision or assistance	Working full shift with supervision or assistance	Comments
1. Pharmacist with Bsc	34	1	Shift is 8-12 hours
2. Pharm D pharmacist	1	0	Shift is 8-12 hours

Table (3.b): Pharmacist source of information verses Individual practice – The quality of medication counseling : (no=35)

Individual practice – The quality of medication counseling (no=35)	% Pharmacist source of information				
	Experience	Guidelines BNF	Internet and online applications	Books	Leaflets
1. Are there obvious self checking routines for accuracy in calculation of dosage, selection of medicines and labeling?					
8 pharmacist answer yes = 23%	0	6	11	3	3
27 pharmacist answer no = 77%	40	0	26	0	11
2. Is good quality of advice given to patients?					
18 pharmacist answer yes = 54%	0	11	34	3	6
17 pharmacist answer no = 46%	26	0	14	3	3
3. Are patients able to repeat and remember vital instructions?					
6 pharmacist answer yes =28%	0	3	16	3	6
29 pharmacist answer no = 72%	49	0	17	0	6
4. Are pharmacist allowed to substitute generic products for brand-name products?					
14 pharmacist answer yes =40%	0	6	20	3	11
21 pharmacist answer no = 60%	25	0	26	3	6
2. Is OTC medication list available in the pharmacy?					
8 pharmacist answer yes =20%	0	3	11	3	3
27 pharmacist answer no = 80%	43	11	26	0	0

Table (4): Demographic characteristics of study participants (n= 279)

Variable	Categories	Frequency	Percentage (%)
Sex	Male	84	30
	Female	195	70
Age	18-20 years	23	8.2
	21-30 years	105	38
	31-40 years	93	33
	41-50 years	50	18
	50-60 years	8	29
Residence area	Arar	50	18
	Rafha	210	75
	Other	19	7
Education	Intermediate education	12	43
	Secondary education	72	25
	University education	164	58
	Master or doctorate	31	11

Table (5) Patients Knowledge of prescribed medicines participants (no = 279)

	Yes (%)		No (%)
Indicator	None Prescribed medicines	Prescribed medicines	All medicines
1. % patients who Knew purpose of medicine.	26	14	60
2. % patients who Knew name of medicine.	25	8	68
3. % patients who Knew how long to take the medicine	19	54	27
4. % patients who received other information about the medicine (including possible adverse effects)	7	9	84
5. % Average dispensing communication time? Satisfactory /not (2-7 min)	10	23	68
6. % of prescribed medications that are adequately labeled?	13	23	65

Table (6): Pharmacist response when asked to dispense (thyroxin and multivitamins) without prescription:

Indicator	Dispense the thyroxin and multivitamins for the same patient without prescription (%)	Refuse to dispense the thyroxin and multivitamins for the same patient without prescription (%)	Provide counseling to the patient (%)	No counseling (%)
Pharmacist asked to dispense (thyroxin and multivitamins) without prescription	100	0	0	100

DISCUSSION

The present study was conducted with the aim of assessing the dispensing practices and their determinants among community pharmacists in the Northern border region of the KSA; a systematic literature review was also conducted.

The findings of study are consistent with those of previous studies, which showed that community pharmacists are generally not Saudi Arabian and have mainly received their degrees from other countries in the Middle East.[18] Most community pharmacists have B Pharm degrees, and their training does not include sufficient, if any, practical

learning. Saudi pharmacists tend to avoid the community setting because the salary and level of job satisfaction are lower than in other settings. Furthermore, pharmacies do not keep any patient records, and information is not relayed back to the primary care provider because of a lack of electronic documentation.[1]

The majority (51%) of participants ranged in age from 21 to 30 years, indicating a maximum of 1-6 years of experience.

Twenty percent of the pharmacies reported that the temperature of the pharmacy is not checked regularly to ensure that it is within an acceptable range. This practice might lead to serious problems in product quality because maintaining manufacturers' recommended storage conditions for medicines is important to ensuring their stability and quality until their expiration date and for serving customers and conserving resources.[19] Less than half of the participants (37%) reported following an official checklist to perform internal inspections in the pharmacy. Pharmacy Auditing and Dispensing[20] suggested that the implementation of a self-audit programme consists of 50 steps to help identify potential audit triggers in a community pharmacy. The audit includes detailed information about each step and is divided into the following four sections that can be used separately or together as needed to meet the needs of the pharmacy practice: prescribing practices, controlled substances management, invoice management, and billing practices. When the participants were asked about checking of dispensed medicines by second staff member, 94% reported that they usually were not checked. According to the WHO dispensing guidelines,[21] all calculations must be double checked by the dispenser or counter checked by a second staff member because dispensing errors cost lives.

When the participants were asked about receiving training during the last 3 years (dispensing or patient counselling about ADRs and AMR), the answer was yes for only 26% and 23%, respectively, of the study participants (Table 1). Career development and CME (continuing medical education) in the field of dispensing practices, AMR and ADRs are integral and beneficial components of personnel and programme management within the community pharmacy, linking individual career goals and potential with better quality of service and knowledge provided to the patient.

The workload was high, with 97% of the pharmacists working full shifts alone without supervision or assistance, which is

considered one of the important factors causing dispensing errors; this is consistent with the results of previous studies.[22,23] Previous studies concluded that a workload should not exceed 120 prescriptions/8 h shift.[24,25]

A majority (77%) of the respondents agreed that clear self-checking routines for accurate dosage calculations, the selection of medicines and appropriate labelling were not implemented, and their main source of information was experience (40%). The MOH, the sole regulating body for community pharmacies, attributes the lack of enforcement to an insufficient number of inspectors.[26] This situation is concerning, given local research showing that community pharmacists in Saudi Arabia lack adequate clinical training and counselling skills to diagnose and/or prescribe.[2,26] The only situation in which pharmacists strictly adhere to the law relates to controlled/narcotic substances because of the serious legal consequences.

Product substitution is usually influenced by therapeutic issues, legal matters and pharmacy practice factors, including work flow, supply issues, and access to current resources.[27] The respondents in the current study reported that their main source of information was Internet and online applications. Only 60% (n=21) of the respondents were allowed to substitute generic products, and the main reason for refusing the substitution was that both physicians and patients believe that generic versions may differ in quality and therapeutic effect from the brand-name drug. This suspicion is based on preconceived ideas and the misuse of generic drugs.[28]In total, 80% (n=27) did not show any evidence of an OTC medication list being available in the pharmacy, and most (43%) relied on their own experience (Table 2b.) Given that most of the pharmacists involved in the study had only 1-6 years of experience, relying on this limited experience with a lack of training probably affects the quality of pharmaceutical care provided to patients.

Forty-three percent of the patients had an elementary education; this limited level of education and misperceptions of illness severity means that the pharmacist needs to explainthe instructions many times. The contributions of the dispensing pharmacists to delivering quality information to patients were unsatisfactory. These results are comparable with previous research .[29]

When the knowledge of the clients about the drugs dispensed to them was assessed, we observed that 60% (n=167) of the respondents did not know the purpose of

the specific medicine. Patient or caregiver information about the medication, particularly drug names, doses and indications, is an important factor determining their compliance and adherence to the therapeutic plan. The present study explored factors associated with a patient's poor knowledge of prescribed and non-prescribed medications. Our results are consistent with those of a previous study,[29]suggesting that patients' knowledge of their medications is unsatisfactory; 68% of the respondents indicated that the time spent communicating during the dispensing of medications was unsatisfactory. The WHO guidelines indicate that the average dispensing time should be > 5 min. However, it was less than 2 min in our study. This lack of communication with patients and interruptions of the pharmacist are the most commonly reported factors contributing to dispensing errors in the KSA. Many procedures can be used to lower stress and interruptions for pharmacists and to offer proper patient counselling. The dispensing area should maintain patient privacy. Proper utilization of other pharmacy staff (pharmacy technicians) will improve the dispensing process and lower the risk of dispensing errors, because proper patient or caregiver counselling can reduce dispensing errors.[22]The professional practice of pharmacists with respect to dispensing thyroxine and multivitamins with iron and providing counselling (multivitamins with iron should be taken at least two hours before or after you take your thyroid medication) showed that a lack of knowledge and training regarding counselling might harm the patients. Counselling can help avoid errors, as it allows the formal identification of products and ensures that the correct medicines are dispensed. It is important to keep interruptions during the dispensing procedure to a minimum.[30,31]

CONCLUSION

Community pharmacies need more stringent regulations and the introduction of more pharmacists with a greater amount of practice-based training. It is apparent from the results that good dispensing practices are lacking in the Northern border region of the KSA.

Consequently, there is an urgent need for regulatory bodies to start imposing career requirements. This study highlighted the need to offer continuing medical training programs for community pharmacists, focusing mainly on good dispensing practices and communication. The OTC medication list should be available and accessible in each pharmacy; pharmacists should be able to

manage prescription calculations and all dispensing processes using references and up-to-date guidelines without relying only on the Internet and online applications.

Measures to ensure good dispensing practices may include restricting the dispensing of prescription-only drugs without prescription. Moreover, self-audit programmes should be implemented.

DECLARATIONS OF CONFLICTING INTEREST

The authors declare that they have no conflicts of interest to disclose.

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