

ASSESSMENT OF COMMUNITY PHARMACISTS' PROFESSIONAL PRACTICE SKILLS AND THE CURRENT STATE OF CORTICOSTEROID SALES AT RETAIL PHARMACIES USING THE CUSTOMER ROLE-PLAY METHOD IN CAN THO CITY IN 2023 - 2024

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ABSTRACT

Background: Widespread, uncontrolled sales of potent corticosteroid drugs are leading to misuse and serious health risks. High abuse rates in Vietnam demand urgent action through stricter rules and education. **Objectives:** This study aims to evaluate community pharmacists' professional practice skills and related factors, as well as to assess the current state of corticosteroid sales at retail pharmacies. **Materials and methods:** This cross-sectional descriptive study was conducted at GPP-compliant retail pharmacies in Can Tho city during 2023-2024, using the customer role-play method. **Results:** Among the dispensed corticosteroid-containing drugs, Prednisolone 5mg represented the largest share (45.9%). The professional practice skills of community pharmacists still have many limitations; nearly all community pharmacists offer very limited advice or information to customers. **Conclusion:** Community pharmacists demonstrate limited professional practice skills, and the abuse of corticosteroids in retail pharmacies is prevalent.

Keywords: Corticosteroid; professional practice skills; medication containing corticosteroids.

I. INTRODUCTION

Corticosteroids, potent anti-inflammatory drugs, are indispensable in treating various medical conditions [1]. However, their widespread availability in retail pharmacies - and the resulting ease of obtaining them without a prescription - has led to frequent high - dose and prolonged use, raising concerns about potential adverse effects [2], [3], [4]. In Thanh Hoa, a study revealed alarmingly high rates of corticosteroid abuse in Vietnam [5]. The misuse and uncontrolled sale of corticosteroids in community pharmacies constitute a critical public health threat, exposing patients to the risk of severe adverse effects, drug dependence, and the masking or worsening of underlying conditions. To address these serious consequences, stricter regulations, enhanced enforcement, and comprehensive education are urgently needed. To further investigate this issue, we are conducting a study with the following objectives: Assessment of community pharmacists' professional practice skills and the current state of corticoid sales at retail pharmacies using the customer role-play method in Can Tho city in 2023-2024.

II. MATERIALS AND METHODS

2.1. Materials

- **Study subject:** The study focuses on pharmacists working at GPP-compliant retail pharmacies operating in Can Tho City.

- **Inclusion criteria:** The pharmacists who are employed at GPP-compliant retail pharmacies in Can Tho city will be included in the study.

- **Exclusion criteria:** The study excludes pharmacists working at pharmacy chains, medical facilities, or retail pharmacies affiliated with regional general clinics. Additionally, any samples with incomplete evaluation information will be excluded from the study.

- **Time for research:** from December 2023 to December 2024.

- **Research location:** 9 urban district/rural district of Can Tho City.

2.2. Methods

- **Study design:** The study employs a descriptive cross-sectional study. This study uses the customer role-play method. Two surveyors act as customers visiting pharmacies to interact with and observe pharmacists. To ensure accuracy, they record audio of the interactions and complete evaluation forms within 15 minutes. In one scenario, a surveyor plays the role of a 21-year-old woman's friend seeking treatment for a red, itchy facial rash with papules and pustules, lasting 5 days after using a new cosmetic product. The surveyors follow a prepared script and record information during the interactions.

- Sample size and sampling method

To determine the sample size for a large population, we use the following formula:

$$n = \frac{Z^2 \cdot \alpha \cdot p \cdot (1-p)}{d^2}$$

Where: $p=0.535$ (the estimated proportion) [5], $d=0,1$ (absolute error), $\alpha=0.05$ (confidence level).

Using a confidence level of 95%, we find $Z(1-\alpha/2) = 1,96$. Substituting these values into the formula, we obtain a minimum sample size of 96. To account for potential temporary closures or halts in operation during the study, we surveyed an additional 10% of the sample, resulting in a total research sample of 106. This sample will be distributed evenly across nine districts. Thus, the required sample size is 135 pharmacists at pharmacies in Can Tho city. Sampling will be conducted randomly based on the list of pharmacies provided by the Department of Health of Can Tho (2022). The samples must meet the inclusion and exclusion criteria.

- Research content:

Predictive characteristics of community pharmacists: This includes age, gender of the pharmacists, business type, business location, time to sell medicine.

Evaluation of professional practice skills and relevant factors: We assessed the professional practice skills of community pharmacists in selling corticosteroids using the customer role-play method.

Information Exploitation Skills: refers to the pharmacist's ability to gather relevant information such as the type of medication needed, the desired dosage form, symptoms, age, weight, medical history, any previous drug allergies, medications the patient has taken since the onset of symptoms and potential risk factors.

Counseling Skills: This aspect assesses the seller's ability to provide appropriate advice, such as making referrals to a doctor, guiding on lifestyle changes or cosmetics use, offering advice on drug use, potential risk factors, medication use, and medication side effects. Furthermore, this evaluation considers instances where the seller does not provide any advice.

Instructional Skills: This aspect assesses the seller's ability to instruct the customer on medication usage, including providing clear instructions on dosage per administration,

frequency of use per day, timing of medication intake (before or after meals), and the total duration of use. Situations where the seller fails to provide any instructions are also considered.

The correlation of a number of factors related to whether or not the drug sellers sell corticosteroids: gender, age group prediction, business type, business location, time to sell medicine.

Assessment of the current situation of corticosteroid sales:

Additionally, the dispensed corticosteroid-containing drugs available for sale include Betamethasone 0,5 mg, Dexamethasone 0,5 mg, Triamcinolone 4 mg, Prednisolone (5 mg and 20 mg), and Methylprednisolone (4 mg and 16 mg).

- **Statistical analysis:** Data entry and coding were performed using Microsoft Excel 2016 and SPSS version 20.

III. RESEARCH RESULTS

3.1. Characteristics of community pharmacists

Table 1. Characteristics of community pharmacists

Characteristics (n=135)	Total (n)	Percent (%)
Gender of the drug seller		
Male	33	22.4
Female	102	75.6
Age group prediction (Years)		
<40	113	83.7
>=40	22	16.3
Type of business		
Pharmacists	114	84.4
Medicine counter	21	15.6
Business location		
Along the main road	50	37.0
Residential Area/Market	85	63.0
Time to sell medicine		
<=5 minutes	120	88.9
>5 minutes	15	11.1

The proportion of pharmacists who are female was high (75.6%); Age groups <40 and >=40 accounted for 83.7% and 16.3%, respectively.

3.2. Evaluating the professional practice skills of selling corticosteroids of community pharmacists and relevant factors

3.2.1. Skills in exploiting patient information

Table 2. Contents of patient information exploitation by drug sellers

Exploitation content	Total	Percent (%)
Pharmacists inquired about the type of medication needed		
Yes	11	8.1
Pharmacists asked about the desired dosage form		
Yes	6	4.4
Pharmacists asked about disease/symptoms		
Yes	90	66.7
Pharmacists inquired about the age		
Yes	40	29.6

Exploitation content	Total	Percent (%)
Pharmacists asked about the weight		
Yes	5	3.7
Pharmacists ask about medical history		
Yes	33	24.4
Pharmacists asked about the history of medication allergies		
Yes	88	28.1
Pharmacists about risk factors		
Yes	7	5.2
Pharmacists asked about the medication taken since the onset of symptoms		
Yes	11	8.1

The findings showed that the percentage of pharmacists asking about disease and symptoms accounted for the highest percentage (66.7%). However, the proportion of pharmacists inquiring about the medication taken since the onset of symptoms was low (8.1%). Additionally, the prevalence of inquiries regarding disease history and allergy history among pharmacies in the surveyed subjects was also low, at 24.4% and 28.1%, respectively. Notably, only 2 out of 135 pharmacists inquired whether the patient had already visited a doctor.

3.2.2. Counseling skills

Table 3. Consultation provided by community pharmacists

Content	Total (n)	Percent (%)
Consultation about seeing a doctor		
Yes	0	0
Consultation on lifestyle/cosmetic use		
Yes	55	40.7
Consultation on risk factors		
Yes	15	11.1
Consultation on medication use		
Yes	35	25.9
Consultation on potential medication side effects		
Yes	35	25.9
No consultation provided		
Yes	46	34.1

Table 3 shows that among the 135 community pharmacists involved in the study, 46 (34.1%) did not provide any consultation to customers. Additionally, very few pharmacists advised patients to consult a doctor or offered guidance on managing the undesirable effects of medications.

3.2.3. Instructional skills

Table 4. Instructions provided by community pharmacists

Content	Total (n)	Percent (%)
Dosage instructions per administration		
No instructions	62	45.9
Verbal instructions only	73	54.1
Instructions on number of doses per day		
No instructions	57	42.2
Verbal instructions only	78	57.8
Instructions on timing of medication (before/after meals)		

Content	Total (n)	Percent (%)
No instructions	62	45.9
Verbal instructions only	69	51.1
Asked to provide instructions	4	3.0
Instructions on total duration of medication use		
No instructions	60	44.4
Verbal instructions only	75	55.6
Each category includes four options: no instructions, verbal instructions only, written instructions only, and requests for instructions; unobservable data are hidden.		

As indicated in Table 4, nearly all community pharmacists offered very limited advice or information to customers about various aspects of medication use, including dosage per administration, number of doses per day, timing of medication.

3.2.4. Evaluate the correlation of a few factors to whether or not drug sellers sell drugs containing corticosteroids

Table 5. The relationship of several factors related to whether the drug seller sells corticosteroids

Factor	OR (CI 95%)	p
Gender of the drug seller		
Male	Reference	0.237
Female	0.611(0.269-1.388)	
Age group prediction (Years)		
<40	Reference	0.152
>=40	0.439(0.139-1.387)	
Type of business		
Pharmacists	Reference	0.206
Medicine counter	1.841(0.709-4.781)	
Business location		
Along the main road	Reference	0.079
Residential Area/Market	2.035 (0.913-4.538)	
Time to sell medicine		
<=5 minutes	Reference	0.049
>5 minutes	2.891(0.973-8.592)	

There was no association between gender, predicted age group, business type, or location and the distribution of corticosteroids. Only the time to sell medicine was a statistically significant difference ($p < 0.05$).

3.3. Assessment of the current situation of corticosteroid sales

Table 6. Medication containing corticosteroids dispensed by community pharmacists

Medication containing corticosteroids	Total (n)	Percent (%)
Betamethasone 0.5mg		
Yes	3	2.2
Dexamethasone 0.5mg		
Yes	9	6.7
Triamcinolone 4mg		
Yes	1	0.7
Prednisolone 5mg		
Yes	62	45.9

Medication containing corticosteroids	Total (n)	Percent (%)
Prednisolone 20mg		
Yes	2	1.5
Medication containing corticosteroids	Total (n)	Percent (%)
Methylprednisolone 4mg		
Yes	27	20.0
Methylprednisolone 16mg		
Yes	5	3.7

According to Table 6, Prednisolone 5 mg represented the largest share (45.9%) of the dispensed corticosteroid-containing drugs, and Triamcinolone 4 mg the smallest (0.7%).

IV. DISCUSSION

4.1. Characteristics of community pharmacists

According to the results of a statistical survey involving 135 respondents, several key characteristics were identified. In terms of the gender distribution among community pharmacists, there was a significant difference between men and women. Specifically, men constituted 24.4% (33), which is much lower than the female proportion of 75.6% (102). These findings are consistent with a study by Nguyen Phuc Hung in 2023, which reported that men accounted for 35% and women for 65%. In terms of age distribution among the participants, age groups <40 and ≥40 account for 83.7% and 16.3%, respectively [6].

4.2. Evaluating the professional practice skills of selling corticosteroids of community pharmacists and relevant factors

According to Table 1, symptom-related questions accounted for the highest proportion at 66.7%. In contrast, questions regarding weight, age, medication history, and medical history were often not fully asked, representing a low percentage (less than 30%). The question assessing whether the patient had seen a doctor yielded an extremely low response rate of only 1.5%. This indicates significant shortcomings among community pharmacists in obtaining patient information [7],[8].

In terms of counseling skills, none of the 135 pharmacists consulted a doctor (0.0%), and 34.1% did not provide advice to their customers. These results are like the findings of Rosalind Miller and Catherine Goodman (2016) [9]. The provision of information on potential risk factors, drug usage, side effects, lifestyle, and cosmetic use accounted for a low to moderate rate (less than 50%). This indicates that the counseling skills of pharmacists remain limited [10].

Most pharmacists provided minimal guidance and tended to respond only when customers inquired. Among the 135 pharmacists surveyed, 18 did not offer any guidance to buyers. According to Table 5, there was no association between gender, age group prediction, business type, business location, time to sell medicine to whether the seller distributes corticosteroids or not.

4.3. Assessment of the current situation of selling corticosteroids

Data in Table 6, Prednisolone 5 mg represented the largest share (45.9%) of the dispensed corticosteroid-containing drugs. These findings are consistent with the findings of a previous survey conducted by Cao Kim Xa [11]. Triamcinolone 4 mg was dispensed in the lowest proportion (0.7%).

V. CONCLUSION

The study reveals that the professional practice skills among community pharmacists at 135 GPP pharmacies/Pharmacy counter in Can Tho City exhibit significant deficiencies. Their abilities to collect and provide information were restricted, particularly regarding allergy history, medical history, medication history. None of the pharmacists required a prescription or advised customers to consult a doctor. Among the 135 pharmacists surveyed, 18 did not provide any guidance to customers. Regarding the current situation of selling corticosteroids at drug retail establishments, it shows that pharmacies/pharmacies do not implement well the regulations on retailing prescription drugs, with up to 45.9% Prednisolone 5mg that is sold without a prescription. This is an alarming situation, requiring strict supervision, sanctions and increased training, knowledge improvement, professional training and professional skills to well implement the "Principles and standards of good pharmacy practice - GPP" issued by the Ministry of Health.

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