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**CURRENT SITUATION OF DRUG SUPPLY BY
PRIVATE DRUG RETAILERS AND
EFFECTIVENESS OF INTERVENTION IN TWO
RURAL DISTRICTS IN HAI DUONG PROVINCE**

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INTRODUCTION

Medicine have an important role in the care and protection of people's health. Vietnam's medicine supply network is growing strongly and widely across the country, with an average of one retail outlet serving 2000 people, with the market share of the private sector now playing a key role.

However, the retail system still has many shortcomings: the situation of selling prescriptive drugs without a prescription is common. In addition, the proportion of drug sellers who practice on consulting and instruction drugs usage for customers is low.

In Vietnam, regulations on good pharmacy practice (GPP) have been established but until now, information on compliance with GPP regulations has been limited. Furthermore, it is lack of evidence on effective intervention to enhance compliance with GPP regulations, enhance the role of drug retailers in promoting rational use of drugs in rural communities. For aforementioned reasons, we conducted this research with the following objectives:

- 1. To describe current situation of implementation of principles, standards of good pharmacy practice (GPP) at private drug retail stores in Kim Thanh and Gia Loc districts in 2012.*
- 2. To describe knowledge and practice of drug sellers at private drug retail stores in Kim Thanh and Gia Loc districts.*
- 3. To evaluate effective of interventions to improve adherence to GPP standards at private drug stores.*

*** Novel contribution of dissertation:**

- Described the situation of the implementation of principles and standards of good pharmacy practice at private drug retail stores in Kim Thanh and Gia Loc districts in 2012.
- Provided evidence on drug sellers' knowledge and professional practice at private drug retailers in Kim Thanh and Gia Loc districts.
- Evaluated the effectiveness of interventions that aimed to improve some standards of good pharmacy practice at private drug retailers.

*** Structure of dissertation:**

The dissertation consist of 122 pages includes: Introduction: 2 pages; Literature review: 34 pages; Subjects and research methods: 25 pages; Results: 28 pages; Discussion: 30 pages; Conclusion: 2 pages; Recommendation: 1 page. 33 tables, 11 figures, 6 images and 94 references (39 in Vietnamese; 55 in English).

CHAPTER 1. LITERATURE REVIEW

1.1. Overview of good practice pharmacy

1.1.1. General concepts of drugs and drug supply

Drug supply is a cycle of delivering drugs from the manufacturer to the user. This is a closed cycle with 4 main steps of selecting, purchasing, preserving, distributing and using medicine.

Good practice is the set of principles and standards for the practice of manufacturing, preserving, testing, circulating drugs, prescribing drugs, testing drugs in clinical trials, cultivating and collecting medicinal herbs, and principles and standards, and other standards issued by the Minister of Health.

1.1.2. Concepts related to drug retailers and GPP quality management criteria

The retail drugstore meets the principles and standards of "Good Pharmacy Practice" (GPP): is the establishment that satisfies the principles and standards specified in Circular 46/2011/ TT-BYT of the Ministry Issued by Minister of Health on December 21, 2011.

1.1.3. Good practice pharmacy (GPP)

Principles and standards of good practice pharmacy

❖ 4 principles of good practice pharmacy

- (1) Setting first priority for the benefits of patients and the community health.
- (2) Provide quality medicine with drug information, appropriate advice for users and monitor their drug use.
- (3) Participate in self-treatment activities, including providing medication and counseling on medication administration, self-treatment of symptoms of simple diseases.
- (4) Contribute to promoting appropriate, economical prescriptions and safe, rational and effective use of drugs.

❖ 3 groups of standards for good practice pharmacy

- Personnel standards.
- Facilities and technical standard for retails.
- Drug storage equipment at retails.
- Pharmacy records, books and documentation standards.

1.1.4. Current status of operations of private drug retailers in the world and in Vietnam

Around the world, most countries have a network of community pharmacies, playing the role of major drug retailers (except in Austria, the situation of self-medicine doctors still accounts for a large proportion). The number of pharmacies per capita is highest in Greece, Bulgaria and Cyprus, and lowest in Denmark, Sweden and Slovenia.

Drug supply and distribution always plays an important role in health care activities. Drug supply is one of the two major goals of the National Drug Policy of Vietnam to "ensure regular and sufficient supply of quality drugs to the people" and "ensure reasonable and safe use of drugs, effective". The Law on Pharmacy No. 105/2016/QH13 was born, "ensuring adequate supply of quality drugs at reasonable prices for the people's need for disease prevention and treatment, in accordance with the disease structure and national defense requirements, security, disease prevention and fighting, disaster recovery, disaster and rare drugs". That confirms that the goal of drug supply is the goal and also a commitment not only of the pharmaceutical industry in particular but also of the Government of Vietnam in general.

1.2. Current situation operation and good practice pharmacy

Vietnam has been following the intervention model groups as follows:

1) Interventions to enhance the knowledge and skills of pharmacists/drug sellers

2) Strengthening the role of state management (strengthening the compliance with the laws of pharmacies, interventions to enhance the quality of GPP-good pharmacy practice)

3) Intervention to enhance knowledge for the community

4) Coordinate multiple interventions

1.3. Introduction to the study area

The study was conducted in Kim Thanh and Gia Loc districts of Hai Duong province. The selection criteria for the two research districts are based on the desirability of rural representation but ensure equivalent criteria for comparison control.

1.4. Study's conceptual framework



Hình 1.3. Study's conceptual framework

CHAPTER 2. SUBJECTS AND RESEARCH METHOD

2.1. Subjects

Subjects of study include district-level state management agencies, private drug retailers, drug retailers and drug buyers at the aforementioned drug retail facilities.

2.2. Location of study

The study was conducted in Kim Thanh and Gia Loc districts of Hai Duong province. In particular, Kim Thanh district was intervention district while Gia Loc district was the control district.

2.3. Study duration

The study was conducted from August 2012 to December 2015, including four stages: pre-intervention investigation, preparation of intervention content, implementation of intervention and evaluation of intervention effectiveness.

2.4. Study design

A mixed method study was carried out including quantitative and qualitative study. Community-based intervention study was applied in which consists of pre- and post-intervention research with control.

2.5. Sample size and sampling

2.5.1. Quantitative study

2.5.1.1. Sample size

❖ Drug retail stores (facilities)

All private drug retail store with business registration in Kim Thanh and Gia Loc districts were selected in the study. Before the intervention, the number of retail stores participating in the research of Kim Thanh and Gia Loc districts were 45 and 47, respectively. However, after intervention, the number of stores in both districts decreased.

❖ Drug retailers (staff)

All drug retailers participating in the practice of retailing at the research deployment stage and met the selection criteria were selected. For people who are working at 2 or more retail stores, he/she will be selected in only 1 main retail store sample.

❖ Customers (drug buyers)

All customers who were buying drugs at retail stores that in the sample and met the eligibility criteria were included in the study.

2.5.1.2. Sampling

❖ Selecting study districts:

Purposely selecting two districts that are Kim Thanh and Gia Loc. Selection of intervention/control districts between these two districts was done by random drawing. Accordingly, Kim Thanh was selected as the intervention district, Gia Loc was the control district.

❖ Selecting private drug retail stores:

Selecting all private drug retail stores that currently operating in 2 study districts and have businesses registration.

❖ Selecting private drug retailers:

Selecting all private drug retailers who directly participated in drug retail at the survey date.

❖ Selecting drug buyers (customers)

Every time a customer comes to buy a drug at a private retail store (and meeting the selection criteria), the researcher will observe the behavior of the drug seller and the customer. After the customer finishes buying medicine procedure, he/she will be invited to participate in the interview.

2.5.2. Qualitative study

The target groups participating in the qualitative research were selected by purposive sampling technique: district state management

agencies and district health centers, health bureaus in Kim Thanh and Gia Loc districts; Health Manager of 2 districts; Private drug retailers in 2 districts.

2.6. Variables and indicators: based on study's objectives.

2.7. Definitions, measures, assessment's standard.

According to sampling, variables, and indicators.

2.8. Data collection techniques

The study used data collection techniques including: direct interviews with structured and semi-structured questionnaires, observations and evaluation through checklists, in-depth interviews and group discussions.

2.9. Intervention activities

The intervention contents were implemented as follows:

- Strengthening the connection between state management agencies and private drug retail facilities:

- + Advocating for policy making, issuing appropriate guiding documents in order to improve the efficiency of State management over private pharmaceuticals.

- + Organizing support monitoring activities

- + Building and maintaining the model of professional briefings with the participation of retail establishments

- Capacity building training for private drug retailers

2.10. Data analysis

Quantitative data: The data collection sheets were cleaned and used Epi-Data software to enter data. STATA 15.1 software was applied to analyze data. Appropriate statistical tests were used in descriptive research and compare before and after in intervention research.

Intervention effectiveness index (HQCT) is used to evaluate intervention effectiveness.

Qualitative data: Information from group discussions and in-depth interview was transcribed immediately after collection. Next, qualitative data were coded and summarized. The researcher then analyzes this information according to each specific topic and content.

CHAPTER 3. RESULTS

3.1. Current situation of implementation of standards of good pharmacy practice (GPP) at private drug retail stores in Kim Thanh and Gia Loc districts in 2012

3.1.1. General information of study's subjects

Table 3.1. Number of private drug store by districts

Type of facilities	Kim Thanh n (%)	Gia Loc n(%)	Total n(%)
Drug shop	1(2.2)	2(4.3)	3(3.2)
Drug store	37(82.2)	26(55.3)	63(68.5)
Drug agent	7(15.6)	19(40.4)	26(28.3)
Total	45(100)	47(100)	92(100)

There were 92 retail facilities surveyed, of which the number of retail facilities in Kim Thanh and Gia Loc were 45 and 47, respectively. In particular, the proportion of drugstores accounted for the majority with 68.5%.

Of the total 97 retailers surveyed, the number of retailers in Kim Thanh and Gia Loc districts was 45 and 52, respectively. Of which, the average age of retailers was 37.9 ± 11.4 years. Female were majority with 80.4%.

A total of 337 drug buyers in two districts were interviewed, of which Kim Thanh district had 170 customers, Gia Loc district with 167 customers. The average time to visit retail establishments of customers in the two districts is 8.0 ± 7.7 and 8.5 ± 7.2 (minutes), respectively. The average age of drug buyers in the two districts is 44.1 ± 11.3 and 43.9 ± 12.0 , respectively. The percentage of female customers in the two districts accounts for the majority of 67.6%.

3.1.2. Current situation of meeting GPP standards at retail facilities in the study area

Bảng 3.2. Trình độ chuyên môn của người bán lẻ thuốc

Professional level	Kim Thành SL (%)	Gia Lộc SL (%)	Chung SL (%)
University pharmacist	1 (2,2)	0 (0)	1 (1,0)
College and intermediate school	38 (84,5)	36 (69,2)	74 (76,3)
High school pharmacist	5 (11,1)	15 (28,9)	20 (20,6)
Other	1 (2,2)	1 (1,9)	2 (2,1)
Total	45 (100)	52 (100)	97 (100)

Of the total 97 retailers interviewed, 26 pharmacists were professional managers of the facility. The majority of retailers have college and intermediate level school of pharmacists (76.3%).

Table 3.3. Compliance on facilities and environmental sanitation of drug retail stores

Compliance	Kim Thanh n (%)	Gia Loc n (%)	Total n(%)
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Facilities condition	26 (57.8)	29 (61.7)	55 (59.8)
Environmental sanitation condition	35 (77.8)	36 (76.7)	71 (77.2)
Total	45 (100)	47 (100)	92 (100)

The percentage of facilities meeting conditions in two districts Kim Thanh and Gia Loc were 57.8% and 61.7%, respectively. Besides, to meet the requirements of environmental sanitation, establishments need to have cool, safe places, away from pollution sources. This proportions in the two districts was 77.8% and 76.7%, respectively.

The percentage of stores meeting the signs board requirement in Kim Thanh was 6.7% and Gia Loc was 0%.

Table 3.4. Compliance with drug storage and arrangements

Indicators	Kim Thanh n(%)	Gia Loc n(%)	Total n (%)
Arrange medicine in accordance with regulations	5 (11.1)	4 (8.5)	9 (9.8)
Do not expose directly areas of medication to the sunlight	33 (75.0)	30 (65.2)	63 (68.5)
List drug prices	11 (24.4)	4 (8.5)	15 (16.3)
Total	45 (100)	47 (100)	92 (100)

The proportion of retail facilities that arrange medicines in accordance with the regulations in the two districts was 11.1% and 8.5%, respectively.

Retail facilities that are inspected by inspection teams (data including inspection activities) every year are very low. The number of Department of Health inspections is the lowest from 0.4 to 0.6 times per

year. Kim Thanh Health Department has an annual average of 1 inspection per health facility, Gia Loc District Health Department has only 0.8 visits per year.

The leader of Hai Duong Department of Health said: *“The inspection has not been done regularly. Not resolute in handling violations of private medical and pharmaceutical practice establishments in general and pharmaceutical establishments in particular. The effectiveness of inspection and supervision is still limited, especially in communes, wards and townships that are still confused about the sanctions ...”* (Indepth interview - Leader of DoH). **3.2. Knowledge and practice of drug sellers at private drug retail stores in Kim Thanh and Gia Loc districts.**

3.2.1. Knowledge and practice toward selling prescription drugs

Out of 10 listed drugs, the percentage of retailers who correctly answered all 5 drugs that need to be prescribed in Kim Thanh and Gia Loc districts was 33.3% and 44.2%, respectively.

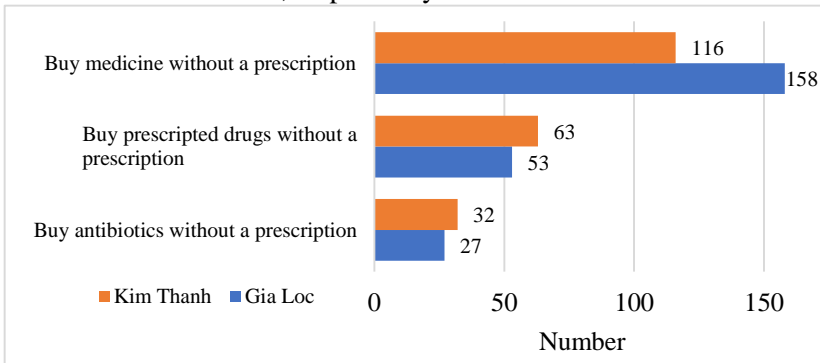
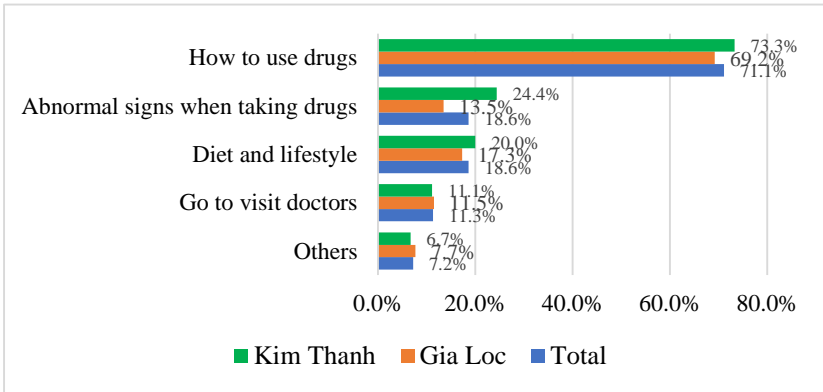


Figure 3.1. Practice selling prescription drugs of retailers

Among 337 drug buyers in the two districts, the number of non-prescription drug buyers in Kim Thanh and Gia Loc districts was 116 (97.7%) and 158 (94.6%) respectively. In particular, the number of

customers buying drugs subject to prescription but still not having



prescription accounted for 63 (95.5%) and 53 (93.0%), respectively.

Results from qualitative research showed that, although retailers are aware of the need to sell drugs only when customers have prescription, the practice is influenced by many other factors. Some of the retailers interviewed frankly said: *“Although I knew that the drug was a prescription drug, I was only a hired seller, so if I did not sell it, the sales would be low, there would be no percentage”*(Focus group discussion - Retailers)

3.2.2. *Knowledge and practice toward retailing and labeling when retailing drugs*

When asking about the information needed to label when retailing drugs, most retailers mention the dose (55.7%), followed by the time of use (17.5%) and the name of the drug / active substance (12.4%).

3.2.3. *Knowledge and practice toward drug usage consultation*

Figure 3.2. Knowledge of the consulting content for customers

The majority of retailers stated that the content to be consulted was about using medicine (71.1%). The percentage of retailers who pointed out the contents to be consulted such as abnormalities when using

drugs, diet or medical examination was 18.6%, 18.6% and 11.3%, respectively.

Retailers said that the content of advice sometimes depends on the needs of drug buyers, not every customer will give the same advice. *“Each one customer want the consultation and guidance differently. If customer have already use it [drug], they will tell me that they already know [how to use drug], I have been using this medicine for many years so you don't have to talk anymore” (Focus group discussion - Retailers).*

3.3. Effective of interventions to improve adherence to GPP standards at private drug stores.

3.3.1. General information about the study subjects in the post-intervention survey

Table 3.5. Number and type of retail facilities at the time after the intervention

Type of facilities	Kim Thanh n(%)	Gia Loc n(%)	Total n(%)
Drug shop	1 (2.4)	1 (2.3)	2 (2.4)
Drug store	39 (92.9)	35 (81.4)	74 (87.1)
Drug agent	2 (4.7)	7 (16.3)	9 (10.5)
Total	42 (100)	43 (100)	85 (100)

After the intervention, a total of 85 retail facilities were surveyed, of which 42 facilities were surveyed in Kim Thanh and Gia Loc, respectively.

Table 3.6. Number and type of facilities that achieve GPP

Facilities achieved GPP	Kim Thanh n(%)	Gia Lộc n(%)	Total n(%)
Drug shop	1 (7.1)	1 (5.9)	2 (6.5)

Drug store	13 (92.9)	16 (94.1)	29 (93.5)
Total	14 (100)	17 (100)	31 (100)

Out of 85 retail facilities surveyed after the intervention, the number of facilities achieved GPP was 31. In particular, all pharmacies (drug shop) of the two districts achieved GPP, only 42% of the types of drugstores achieved GPP. Compared to the pre-intervention survey results, this is a good result, the expected rate increased significantly.

Discussing this issue with private drug retailers mostly agreed with the implementation of this standard but need differentiated benefits for those facilities that have not yet achieved GPP “*how can we be different from other retailers when we reach GPP*” (Focus group discussion - Retailers).

With establishments achieving GPP, the qualification is mostly high school pharmacists (80.6%). The proportion of university pharmacists accounts for only 3.5%.

3.3.2. *Effective interventions (EI) to improve compliance with some GPP standards at private drug retailers*

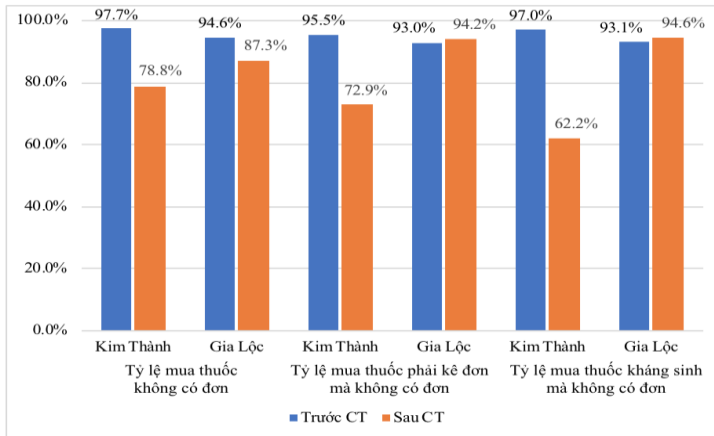
Table 3.7. Change in compliance with facilities and sanitation conditions

Content	Kim Thanh n (%)			Gia Loc n (%)			HQCT
	Pre (n=45)	Post (n=42)	EI	Pre (n=47)	Post (n=43)	EI	
Facility condition	26 (57.8)	41 (97.6)*	0.94	29 (61.7)	32 (74.4)	0.33	0.61
Sanitation	35 (77.8)	40 (95.2)*	0.78	36 (76.7)	37 (86.1)	0.40	0.38

(*) $p < 0,05$

The percentage of facilities complying with facilities conditions in Kim Thanh before and after the intervention were 57.8% and 97.6%, respectively, the difference was statistically significant with $p < 0.05$. In Gia Loc, the rates before and after the intervention were 61.7% and 74.4%, however, this difference was not statistically significant ($p > 0.05$). The intervention was effective with $HQCT=0.61$. Similar results for the proportion of facilities complying with environmental sanitation conditions.

The percentage of facilities complying with the proper medicine arrangement in Kim Thanh before and after the intervention were 11.1% and 47.6%, respectively. This difference is statistically significant with $p < 0.05$. In Gia Loc, the rates before and after the intervention were 8.5%



and 25.6% respectively. However, this difference is not statistically significant ($p > 0.05$).

The percentage of customers who bought medicine without a prescription in Kim Thanh decreased from 97.7% before the intervention to 78.8% after the intervention ($p < 0.05$). Meanwhile, the rates in Gia Loc before and after the intervention were 94.6% and 87.3%, respectively ($p > 0.05$).

The percentage of buying prescription drugs without a prescription in Kim Thanh district decreased significantly after the intervention, from 95.5% to 72.9% ($p < 0.05$). However, this rate in Gia Loc slightly increased from 93.0% to 94.2% ($p > 0.05$). Similar results were found for systemic purchase of antibiotics without a prescription.

Figure 3.3. Effective intervention on the practice of selling prescription drugs

However, when interviewed, the retailer still answered, *“If we only sell drug when customers have prescription, we will not be able to do it at this moment because if we do that, we might have only one prescription for a whole week. So, how can we sell the prescribed drugs. Additionally, if we don’t sell the drug to customer if he/she don’t have prescription, next time they will not come to our store”* (Focus group discussion - Retailers).

This implies that compliance with prescription drugs is not easy and is influenced by many other factors.

Regarding the practice of labeling when retailing drugs, the proportion of customers buying drugs out of retail without proper labeling in Kim Thanh decreased from 47.4% before the intervention to 15.5% after the intervention. This rate in Gia Loc increased slightly, from 47.8% to 56.7% after the intervention, but this increase is not statistically significant with $p > 0.05$. Interventions are effective in reducing the proportion of customers who buy drugs that are not labeled appropriately when retailing (HQCT= -0.78).

Survey on the contents that need counseling for customers when buying drugs, after the intervention in both districts, there is an increase in the proportion of correct answers to the issues that need advice such as how to use drugs, abnormalities when using drugs. medicine, diet, living

... However, in Kim Thanh district, the increase rates are statistically significant, while in Gia Loc district the increase is not statistically significant. Can confirm the intervention is effective with this content.

Regarding the practice of counseling for drug buyers, the percentage of the retailer's consulting content has increased statistically in Kim Thanh district. In particular, the increase is the most consultative advice when needed and the diet when using drugs with EI was 0.43 and 0.38. Similar results were found in Gia Loc district, but the increase was not statistically significant ($p > 0.05$).

3.3.3. *Opinion regarding intervention activities*

Most research subjects highly appreciated the usefulness of intervention activities. Of which, 90.5% of respondents agreed that briefings were useful for retail establishments. 100% of the respondents thought that the training activities were useful and the percentage for monitoring and support activities was 97.6%.

Results from qualitative research also show that the intervention activities were positively received from the research subjects:

"I think the program activities are very effective and necessary for our us, we hope that these activities will be maintained so that we have a" base" [backup]"(Focus group discussion - Retailers).

"I found most useful is receiving professional training since I have learned good and useful knowledge. It not only helps to sell drugs but also help me to be able to take care of myself as well as my family" healthy for everyone close to him "(Focus group discussion - Retailers).

CHAPTER 4. DISSCUSSION

4.1. Current situation of implementing standards of GPP at private drug retail facilities in Kim Thanh and Gia Loc districts in 2012.

As a rule, drug retailers need professional qualifications of pharmacists or above. In the two surveyed districts, each district has a drug retailer that does not meet the personnel requirements; Specifically, the two drug retailers at these two facilities are high school nurses.

At the time of study, both intervention and control districts did not reach the rate of 100% of the facilities complying with the standards of material and technical facilities as well as standards of environmental sanitation. This data differs from the results of a number of studies on facilities that have previously achieved GPP, which indicates that 100% of retail establishments meet the criteria for facilities.

The proportion of retail establishments that arrange drugs according to regulations (sorting drugs by pharmacological effects group, by type and expiry date) in the two districts is relatively low. These ratios are 11.1% and 8.5% for Kim Thanh and Gia Loc respectively. In a previous study, the prescribed medication arrangement was also often non-compliant and occurred in most retail establishments, even including establishments that had achieved GPP.

The management of private pharmaceutical practice in the study area is also in the general situation of the whole health sector, the lack of a practice management policy framework, lack of data on the status of operation of the private health sector as well as the role of the private health sector in the health system in general and the drug retail system in particular at primary health care has not been linked.

4.2 Knowledge and practice of drug sellers at private drug retail facilities in Kim Thanh and Gia Loc districts

For the sale of prescribed drugs without a prescription, the research results of this thesis show the similarity with the previous researches, this proportion accounts for more than 90%.

Through interviews with drug retailers in this study, the cause of the sale of prescription drugs but no prescription came from the fact that many buyers did not have a prescription. The situation of selling drugs on the list of prescription drugs without a prescription was quite common, 91% in rural areas. Although prescriptions and prescriptions are sold, patients can still buy many of the drugs on the prescription drug list from drug retailers. For people, buying medicine directly is a form of saving money and time compared to going to the doctor. Along with that is the lack of knowledge about rational antibiotic use.

The situation of improper retailing of drugs and inadequate or inadequate drug labeling not only occurs in Vietnam but also in other low- and middle-income countries. In assessing the retailer's practice of this content, nearly 50% of retail drug buyers were not appropriately labeled (47.6%).

In this study, retailers mentioned that the content to consult was about the highest proportion of taking medicine (71.1%). The consulted contents such as abnormalities when taking medicine, daily diet or medical examination were consulted at low rates of 18.6%, 18.6% and 11.3% respectively. Content of advice sometimes depends on the needs of the drug buyers, not all customers have the same advice, retailers sometimes share the advice, the customers do not want to hear. In addition, counseling also needs time and space. Many drug retailers have

not set aside a private area for advice, which is one reason why this activity has not been implemented or implemented effectively.

4.3 Effective interventions to improve compliance with some good pharmacy practice standards at private drug retailers

As a result, the percentage of facilities complying with facilities conditions in the intervention district (Kim Thanh) increased significantly after the intervention. Both districts had an increase in the compliance rate with facilities conditions and environmental sanitation with effectiveness index= 48.2.

Our study results showed that interventions are effective in improving knowledge and practice of retail labeling. At the same time, intervention is effective in reducing the proportion of customers who buy drugs that are not labeled appropriately when retailing (HQCT = 50).

Interventions were effective in improving the knowledge and practice of prescription drug sales. The results of Wirtz research in several Latin American countries show that policy interventions are effective in preventing over-the-counter antibiotics. At the same time, the author acknowledges that solutions are needed to improve the sustainability of these interventions.

4.4. Study's limitations

Study only investigated the selling stage of drugs in the drug supply chain, so it did not describe the impact of other factors such as economy and market on the practice of providing quality drugs. A random sample of customers selected during a survey day (from opening to closing) may not yet represent the retail sales practices of the facilities and will be affected by factors such as crops and outbreak.

CONCLUSION

1. Current situation of implementation of principles, standards of good pharmacy practice (GPP) at private drug retail stores in Kim Thanh and Gia Loc districts in 2012.

- The compliance with GPP standards among private drug retailers was quite low. Except for compliance with human resources standards, the proportion of retail facilities that comply with other standards was low. The rate of compliance with facilities standards in Kim Thanh and Gia Loc districts was 57.8% and 61.7%, respectively; area standards reached 84.4% and 85.1%, respectively; standards of storage equipment such as thermometers, hygrometer reached only 47.6% and 31.9% respectively; standards for retail packaging was only 26.7% and 23.4%
- The inspection and supervision work has not been carried out regularly, lack of support from the authorities and almost retail activities have not been supervised and post-inspected due to the lack of manpower and financial mechanisms to perform.

2. Knowledge and practice of drug sellers at private drug retail stores in Kim Thanh and Gia Loc districts.

- The knowledge and practice of private drug retailers were limited in the contents related to the daily sale and storage of drugs.
- The proportion of people having knowledge about prescription medicines in Kim Thanh and Gia Loc districts was 33.3% and 44.2%, respectively.
- The rate of answering information when labeling retail was below 20%.
- The proportion of drugs sold retail without proper labeling was still high, roughly 50%.

- The proportion of retailers who had knowledge and practice on guidance medicines usage for customers was low at less than 20%.
 - Retailers are hardly allowed to participate in professional training courses and legal documents, they are not really considered a member of the primary care network - the grassroots health network.
- 3. *Effective of interventions to improve adherence to GPP standards at private drug stores.***
- The effectiveness of intervention on compliance with good practice standards on facilities and sanitation has increased statistically at the intervention district.
 - The rate of compliance with equipment standards in the intervention district increased to approximately 90% ($p < 0.05$). The implementation of professional regulations such as arranging drugs according to regulations have increased significantly in the intervention district, with statistical significance.
 - The proportion of prescription drugs sold without a prescription drops to around 60-70%.
 - Knowledge-training interventions for private drug retailers are effective interventions. The percentage of retailers who have knowledge about counseling for drug buyers all increased by 2-3 times and was statistically significant in the intervention district.
 - The creation of a channel to connect, share and encourage private drug retailing establishments, strengthening the connection with state management agencies at all levels in the locality is necessary and needs to be maintained regularly.

RECOMMENDATION

- ❖ For private drug retail facilities:
 - It is necessary to understand the roles and responsibilities of private drug retailers in primary health care.
 - Better adherence to the rules of selling prescription drugs, retailing and labeling of drugs.
 - Regularly updating professional knowledge and related legal documents, increasing the use of scientific research materials when necessary.
 - Enhancing advising customers on information within the permitted practice scope based on their needs.
- ❖ For provincial and district government authorities:
 - Maintain and promote regular meeting and supervise support to update professional knowledge, strengthen connection with private drug retailers, enhance their role in primary health care at the grassroots level.
- ❖ For central management authorities:
 - Promoting the role of the Professional Association such as the Private Medical and Pharmaceutical Association, the Pharmaceutical Association in the supervision, support and professional compliance consultancy in the context that the state management personnel are not sufficient. resources to carry out these activities.

**LIST OF PUBLICATIONS RELATED TO THE CONTENT OF
DISSERTATION**

1. **Hoang Thu Thuy**, Tran Thi Mai Oanh, Le Quang Cuong, Nguyen The Vinh, Ho Thi Minh Ly (2015). *Knowledge and practice of private drug retailers at rural area in 2012*. *Journal of preventive medicine*, Volume XXV, Issue 8 (168) 2015, special issue, page 515-522.

2. **Hoang Thu Thuy**, Tran Thi Mai Oanh, Le Quang Cuong, Ho Thi Minh Ly (2019). Effectiveness of intervention on knowledge and practice among private drug retailers in rural area in Vietnam. *Journal of medical practice*, Volume 9 (1110) 2019, page 97-100.