

## **Action Research to Resolve the Problems of Illegal Advertising of Health Products in Pharmacies in Chonburi Province**

Pongnuwat Sombutpoothon<sup>1</sup>, Yada Reamrimmadun<sup>2</sup>, Prodpran Tasiri<sup>2</sup>,  
Kanokkan Sareekhahohnjaru<sup>3</sup>, Supanai Prasertsuk<sup>4</sup>

<sup>1</sup>Health Consumer Protection and Pharmacy Department, Chonburi Provincial Public Health Office

<sup>2</sup>Faculty of Science and Technology, Rajabhat Rajanagarindra University, Chachoengsao

<sup>3</sup>Health Consumer Protection and Pharmacy Department, Chanthaburi Provincial Public Health Office

<sup>4</sup>Health Consumer Protection and Pharmacy Department, Nong Bua Lamphu Provincial Public Health Office

### **Abstract**

**Objective:** To address the issue of illicit advertising of health products (AHP) within community pharmacies in Chonburi. **Methods:** This action research employed the PDCA quality cycle framework in 120 owners of modern pharmacies. The Plan phase (P) involved focus group discussion among 18 key informants whose work related to AHP in pharmacies, and having more than 10 years of experience in this field. The informants analyzed and prioritized the problems, designed the program to resolve the problems, and planned for program implementation. The Do phase (D) was the implementation of program designed in the Plan phase. A questionnaire was used to measure pharmacy owners' knowledge on laws related to AHP, attitudes about legal AHP, and awareness of the impact of illicit AHP before and after participating in the program activities. The researchers visited the pharmacies to inspect legal compliance of AHP 2 weeks after the activities. In the Check phase (C), a focus group discussion of 18 key informants in the planning phase was held to evaluate the program according to the specified goals, reflect on the problems and suggest how to resolve them in the next cycle of effort. In Act stage (A) was the revision of strategies to avoid problems encountered during the PDC stage in order to strengthen the program and expanding it to other areas. **Results:** Three factors leading to legal violation of AHP were 1) lack of related knowledge or ignorance of pharmacy owners and/or pharmacy practitioners; 2) poor attitudes towards legal compliance on AHP; and 3) lack of awareness of the impact of AHP. The program for addressing illicit AHP in pharmacies involved 4 activities including 1) knowledge building activities, 2) attitude change activities, and 3) activities for raising awareness of the impact of AHP; and 4) correction of AHP in pharmacy. After participating in the activities, there was a statistically significant increase in the scores on knowledge on the law relating to AHP, attitudes toward legal AHP and awareness of impact of AHP, compared to those measured before participating in the activities ( $P < 0.05$ ). Assessment of all pharmacies did not find any illegal acts related to AHP **Conclusion:** Addressing the offenses associated with AHP in pharmacies through action research was effective, leading pharmacy owners to legally advertise health products.

**Keywords:** health product advertisement, action research, quality cycle, drugstores, consumer protection

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**Correspondence:** Pongnuwat Sombutpoothon, Health Consumer Protection and Pharmacy Department, Chonburi Provincial Public Health Office, Mueang Chonburi, Chonburi, 20000 **E-mail:** [pongnuwat.keng@gmail.com](mailto:pongnuwat.keng@gmail.com)

## การวิจัยเชิงปฏิบัติการเพื่อแก้ไขปัญหาการกระทำผิดกฎหมายที่เกี่ยวข้อง การโฆษณาผลิตภัณฑ์สุขภาพของร้านขายยาในจังหวัดชลบุรี

พงษ์วัฒน์ สมบัติภูธร<sup>1</sup>, ญาดา เรียมริมมะดัน<sup>2</sup>, โปรดปราน ทาศิริ<sup>2</sup>, กนกกาญจน์ เสรีขจรารุ<sup>3</sup>, สุนัย ประเสริฐสุข<sup>4</sup>

<sup>1</sup>กลุ่มงานคุ้มครองผู้บริโภคและเภสัชสาธารณสุข สำนักงานสาธารณสุขจังหวัดชลบุรี

<sup>2</sup>คณะวิทยาศาสตร์และเทคโนโลยี มหาวิทยาลัยราชภัฏราชนครินทร์ จังหวัดฉะเชิงเทรา

<sup>3</sup>กลุ่มงานคุ้มครองผู้บริโภคและเภสัชสาธารณสุข สำนักงานสาธารณสุขจังหวัดจันทบุรี

<sup>4</sup>กลุ่มงานคุ้มครองผู้บริโภคและเภสัชสาธารณสุข สำนักงานสาธารณสุขจังหวัดหนองบัวลำภู

### บทคัดย่อ

**วัตถุประสงค์:** เพื่อแก้ไขปัญหาการกระทำผิดตามกฎหมายที่เกี่ยวข้องกับการโฆษณาผลิตภัณฑ์สุขภาพของร้านขายยาในจังหวัดชลบุรี **วิธีการ:** การวิจัยเชิงปฏิบัติการครั้งนี้ดำเนินการโดยใช้วงจรคุณภาพ PDCA ในผู้ประกอบการร้านขายยาแผนปัจจุบันในจังหวัดชลบุรี จำนวน 120 แห่ง ในขั้นตอนการวางแผน (P) เป็นการสนทนากลุ่มในผู้ให้ข้อมูลคนสำคัญ 18 คนซึ่งเป็นผู้ที่มีส่วนเกี่ยวข้องกับการโฆษณาผลิตภัณฑ์สุขภาพในร้านขายยา และมีประสบการณ์ในด้านนี้มากกว่า 10 ปี เพื่อร่วมกันวิเคราะห์และจัดลำดับความสำคัญของปัญหา ออกแบบกิจกรรม และวางแผนในการแก้ไขปัญหา ในขั้นการปฏิบัติ (D) เป็นการจัดกิจกรรมตามที่ได้ระบุในขั้นตอนการวางแผน และใช้แบบสอบถามวัดความรู้เกี่ยวกับกฎหมายการโฆษณาผลิตภัณฑ์สุขภาพ (ความรู้) ทศนคติเกี่ยวกับการโฆษณาผลิตภัณฑ์สุขภาพอย่างถูกต้อง (ทัศนคติ) และความตระหนักถึงผลกระทบจากการโฆษณาที่ไม่ถูกต้อง (ความตระหนัก) โดยวัดก่อนและหลังการเข้าร่วมกิจกรรม ผู้วิจัยเยี่ยมร้านขายยาเพื่อตรวจสอบความถูกต้องเกี่ยวกับการโฆษณาหลังการจัดกิจกรรม 2 สัปดาห์ ในขั้นการตรวจสอบ (C) เป็นการจัดสนทนากลุ่มผู้ให้ข้อมูลคนสำคัญ 18 คนเหมือนในขั้นตอนการวางแผน เพื่อวิเคราะห์ผลที่เกิดขึ้นกับวัตถุประสงค์ที่ได้ตั้งเป้าหมายไว้ สะท้อนปัญหาและเสนอแนวทางในการแก้ไข ในวงจรการทำงานต่อไป ขั้นการปรับปรุงการดำเนินงาน (A) เป็นการปรับปรุงแก้ไขปัญหาก็พบระหว่างการดำเนินการตามขั้นตอน PDC เพื่อให้กระบวนการมีความสมบูรณ์ และนำไปขยายผลในพื้นที่ต่อไป **ผลการวิจัย:** สิ่งส่งเสริมให้เกิดการกระทำผิดประกอบด้วย 3 ประเด็น คือ 1) การขาดความรู้หรือรู้เท่าไม่ถึงการณ์ของผู้ประกอบการ และ/หรือผู้มีหน้าที่ปฏิบัติการของร้านขายยา 2) การมีทัศนคติที่ไม่ดีเกี่ยวกับการปฏิบัติตามกฎหมายการโฆษณา และ 3) การขาดความตระหนักถึงผลกระทบจากการโฆษณาผลิตภัณฑ์สุขภาพ แนวทางการแก้ไขการกระทำผิดเกี่ยวกับการโฆษณาผลิตภัณฑ์สุขภาพในร้านขายยา คือ การจัดอบรมเชิงปฏิบัติการ 4 กิจกรรม ได้แก่ 1) กิจกรรมการเสริมสร้างความรู้ 2) กิจกรรมปรับเปลี่ยนทัศนคติ 3) กิจกรรมสร้างความตระหนักถึงผลกระทบจากการโฆษณาผลิตภัณฑ์สุขภาพ และ 4) กิจกรรมปฏิบัติการปรับปรุงแก้ไขการโฆษณาของร้านขายยาภายหลังการเข้าร่วมกิจกรรมผู้ประกอบการมีคะแนนความรู้ ทศนคติ และมีความตระหนัก สูงกว่าก่อนเข้าร่วมกิจกรรมอย่างมีนัยสำคัญทางสถิติ ( $P < 0.05$ ) การประเมินร้านขายยาทุกแห่งไม่พบการกระทำผิดกฎหมายเกี่ยวกับการโฆษณาผลิตภัณฑ์สุขภาพ **สรุป:** การแก้ไขปัญหาการกระทำผิดเกี่ยวกับการโฆษณาผลิตภัณฑ์สุขภาพในร้านขายยาด้วยการวิจัยเชิงปฏิบัติการ เป็นสิ่งที่ได้ผล ทำให้ผู้ประกอบการร้านขายยาสามารถโฆษณาผลิตภัณฑ์สุขภาพได้อย่างถูกต้องตามกฎหมาย

**คำสำคัญ:** โฆษณาผลิตภัณฑ์สุขภาพ การวิจัยเชิงปฏิบัติการ วงจรคุณภาพ ร้านขายยา การคุ้มครองผู้บริโภค

## Introduction

In the present day, medical technology has made significant advancements in production, resulting in a diverse range of health products tailored to meet consumer needs. This has led to intense marketing aiming to reach as many consumers as possible. (1) As a result, the use of advertising media has become a crucial tool for stimulating product sales by influencing consumers' thoughts, attitudes, values, and behaviors. The modern health product marketing encompasses both pre- and post-digital economy strategies. In the past, health products were marketed through traditional means, with distinct locations and various distinct forms of advertising. In the digital economy era, however, a complex marketing has emerged, involving contract manufacturing factories to ensure rapid production and distribution, online trading and an expanded advertising channels. (2) Unfortunately, this has given rise to the problems on advertising for non-drug health products with exaggerated claims, false or overstated claims, leading consumers to believe that these products can treat, cure, or prevent diseases. (3) This can pose health risks and result in unfair treatment of consumers.

Community pharmacy in Thailand serves as a community-wide distributor of health services, with the majority being in private sector. (4) It acts as a profitable retail enterprise focusing on long-term growth while contributing to community well-being. (5) Diverse range of health products available in pharmacies and the considerable number of pharmacies lead to significant competition. Consequently, pharmacy owners employ marketing strategies to enhance sales, primarily through advertising within the pharmacies. These practices are consistent with the findings of a study indicating that illegal advertising of health products (AHP) often aroused due to a combination of factors such as a lack of knowledge and skills in legal AHP, as well as a drive for profit and survival of business. (6)

Chonburi is the province with the second-largest number of pharmacies in the country, currently

totaling 1,083. During the year 2018 to March 2022, there were 234 complaints on 156 pharmacies regarding AHP. (7,8) In 2022, inspection of pharmacies in Chonburi with the history of illicit AHP revealed that 129 out of the 156 were still advertising their health products. 120 out of 129 pharmacies with AHP (93.02%) were identified as repeat offenders. This issue raises concerns about consumer safety. (9) Despite Chonburi Province's continuous efforts in strengthening pharmacies, a concrete program to address illegal AHP in these pharmacies was yet to be implemented.

Review of literature identified some studies addressing the problems on online AHP and advertising of healthcare institutions. However, a notable gap exists in addressing and preventing such issues within pharmacies, which serve as direct information sources of consumers regarding health products. More than 70% of Thai opt for pharmacy services over hospital or clinic visits for minor ailments, implying a considerable exposure to health product advertising within pharmacies. Moreover, the problem of unlawful AHP within pharmacies in Chonburi remains largely unaddressed. This situation poses a potential risk, as these pharmacies might inadvertently engage in illegal advertising practices owing to their lack of relevant knowledge and skills. Such deviations, in turn, can undermine the quality and reputation of these pharmacies and erode public trust. According to the Ministry of Public Health's announcement regarding regulations on establishments, equipment and Good Pharmacy Practice (GPP) for modern pharmacies in accordance with the Drug Act B.E. 2557, section 23 on its appendix B concerning GPP in modern pharmacies mandates that the dissemination of information and advertising materials to clients must be approved in writing by practicing pharmacists. It is regarded as the responsibility of practicing pharmacists to ensure that information provided in the pharmacies is without over-claims, distortion or misinterpretation, while adhering to legal prerequisites.

The researchers with a role as a legal authority overlooking pharmacies and relevant laws are interested in designing the program for addressing such problems through action research model based on the Deming's PDCA quality cycle (11). The research cycle consists of 4 phases: Plan, Do, Check, and Act. The objectives of this study were 1) to formulate program for addressing the problem on illegal AHP, and 2) to evaluate the effectiveness of such program in curbing legal violation related to AHP. The program is expected to lead improve legal compliance on AHP among pharmacy owners, reduction of complaint instances, and safe consumption of health products by the public.

## Methods

This action research was approved with an expedited review by the Research Ethics Committee of the Chonburi Provincial Public Health Office according to project number CBO REC No 65-0031 on June 14, 2022. The study consisted of 4 phases including Plan, Do, Check and Act.

### Phase 1 Plan

The Plan phase was an assessment of the problem using the information on the record of illegal AHP, legal complaints and prosecution related to AHP in pharmacies. A committee was appointed to design and implement the program to address the issues of illegal AHP. Eighteen members of the Committee consisted of those involved in AHP in pharmacies with more than 10 years of experience in the field, including 3 staff members of the Chonburi Provincial Public Health Office, one staff member in a public hospital in Chonburi Province, one staff member of the District Public Health Office, one representative from "quality pharmacy" or those accredited by the Council of Pharmacy of Thailand, one representative from community pharmacies participated in the service provision project of the National Health Security Office of Thailand, five representatives of modern pharmacy

owners, two representatives of franchised pharmacies, two representatives of the Chonburi Pharmacist Association, one representative of the Chonburi Pharmacy Owner Association and one representative from the Eastern Ruamjai Pharmacy Owner Association.

### *Committee's meeting*

In the Plan phase, the Committee assessed the problem, designed the program and related activities to address the problems, set the goals of the program and timelines for activities. At the start of the Committee's meeting, the researchers presented the findings obtained from past research (9) on the prevalence of illegal AHL in pharmacies, legal complaints and related prosecution in the Province, and information from interviews with pharmacy owners on causes of illegal AHP and barriers to comply with the laws. These information served as an input for the meeting.

The meeting of the Committee was structured as a focus group discussion with the following topics: prioritization of the problems, strategies to address illegal AHP, and activities for the strategies. The questions to be used in discussion were examined for their content validity by three experts. The questions were also pilot-tested in a group of three members including one pharmacy owners, one Provincial Public Health Office official and one representative of the Chonburi Pharmacist Association.

Members of the Committee were encouraged to freely express their opinions, and participate in analysis of the problem as well as designing the program for addressing the problem. The researchers tape recorded the meeting with all members being informed and giving permission prior to meeting. The researchers were moderators of the meeting. If any conflict arose, the meeting was temporarily suspended. Information and explanation were then provided to reconcile different perspectives among those involving in the conflict, and the meeting was resumed until the needed information was obtained.

The discussion was transcribed after meeting. Data were analyzed using content analysis. Triangulation was done by comparing data from focus groups discussion with those obtained from phone calls to all 18 members of the Committee to recheck important information.

## **Phase 2 Do**

After the program to address the problem was concluded from the Plan phase, the next phase of Do proceeded. The researchers introduced the program and its related activities at a meeting to 120 pharmacy owners with a history of illegal AHP between 2018 and 2021 and being identified again as repeat offenders in 2022. The researcher explained the rationale of the program and its details in addressing the problem, and invited pharmacy owners to participate in workshop with the following activities: 1) knowledge building activities related laws governing AHP; 2) activities to improve positive attitudes towards legal AHP, and 3) activities to raise awareness of the impact of illegal AHP. The workshop of three activities took two days with 6 hours per day. The fourth activity was pharmacy visit at two weeks after the completion of the workshop to inspect advertising practices in pharmacies.

### ***Instruments and data collection***

The instrument used to collect data in this phase was a questionnaire consisting of 3 parts as follows: Part 1 or the test of knowledge on laws related to AHP in pharmacies modified from the test by Pattamaporn Patamasrawut and Rungtiwa Muenchampa (12). The test contained 10 questions in true-false format with one point of score for each correctly answered question. Part 2 was the measure of attitudes towards legitimate AHP with 10 questions in a 5-point Likert rating scale format from strongly agree, agree, not sure, disagree, and strongly disagree. Part 3 of the instrument measured awareness of impact from illegal AHP. Its questions were developed by the researchers to cover the Drug Act 1967 and its

amendments, the Food Act, B.E. 2522, the Medical Device Act, B.E. 2551 and its amendments, the Herbal Products Act B.E. 2562, including their related Announcement of the Ministry of Public Health and regulations.

The instrument was examined for its content validity by 3 experts in the field. Item-objective congruence or IOC index for each item was between 0.67-1.00. The revised instrument was pilot-tested in 30 pharmacies in Chachoengsao province with the characteristics similar to the study population. Cronbach's Alphas for the tests for knowledge on laws related to AHP, attitudes towards legal AHP and awareness of impact from illegal AHP were 0.78, 0.82, and 0.80, respectively.

The instrument was administered twice to participants of the workshop, i.e., before and after participating in the workshop. The researchers visited pharmacies after attending the workshop for two weeks in order to inspect their advertising practices.

### ***Data analysis***

Descriptive statistics was used to summarize the data. Knowledge on laws related to AHP, attitudes towards legal AHP and awareness of impact from illegal AHP measured before and after the workshop were compared using paired t-test.

## **Phase 3 Check**

"Check" or the evaluation of the program by the Committee was done during its meeting by examining the outcomes of program activities in term of change in knowledge on laws related to AHP, attitudes towards legal AHP, awareness of impact from illegal AHP, and legal compliance of AHP among pharmacies. The outcomes were compared to the goals. The Check phase also concluded results of program evaluation, reflected on barriers and difficulties encountered during program formulation and implementation. Findings in the phase was used as input for improving future program to address the problem.

The meeting was structured as a focus group discussion where the researchers were moderators to facilitate the discourse to meet the objective of program evaluation. The researchers transcribed focus group discussion when the meeting ended. The data were analyzed using content analysis. Data triangulation was done by comparing important data from focus group discussion with those obtained from phone calls to the Committee's members who attended the meetings.

#### **Phase 4 Act**

The objective of the Act phase was to improve parts of the program encountering difficulties and barriers. The Committee, during its meeting, considered taking action to improve the future program to avoid difficulties and barriers encountered in the past. In case that the problem of illegal AHP in pharmacies was successfully addressed, the Committee would endorse the program to be the strategies for resolving the problem in future.

## **Results**

#### **Characteristics of the participants**

Out of the 120 owners of modern pharmacies, 45.00% were both licensees of pharmacies and authorized practicing pharmacists. 66.67% were females, and 51.66% were 40-49-year olds. 45% of them were licensed pharmacists, 75% of them holding a bachelor's degree. The majority (75.00%) had been in business for a duration of 5-10 years.

#### **Problem analysis and the program**

Data analysis from previous interviews with pharmacy owners committing illegal AHP in Chonburi Province revealed three main possible causes of the problems: 1) lack of knowledge on laws governing AHP among pharmacy owners and/or practicing pharmacists; 2. negative attitudes towards legal compliance on AHP as expressed by the following statements "I believe advertising in a pharmacy doesn't require any legal

authorization. It should be legal as long as a pharmacist oversees it" and "Advertising serves as a promotion for pharmacies. It boosts sales as customers trust pharmacies' messages. If any doubts arise, consumers can consult with the pharmacist."; and 3. limited understanding of the adverse impacts of illegal AHP.

The Committee proposed the following strategies for addressing the problems:

1) Workshops for pharmacies with the history of illegal AHP: The workshops focused on provision of relevant knowledge and sharing insights by using various case studies. The goals of the workshop were to enhance relevant knowledge, foster a positive attitude towards legal AHP, and raise awareness on potential consequences of misconduct.

2. Monitoring after the workshop: Pharmacies were expected to apply the gained knowledge to correct their practices of AHP within two weeks after attending the workshop.

3. Evaluation of program from changes among pharmacy owners in terms of knowledge on the laws related to AHP, attitude towards legitimate AHP, awareness of the negative effects of illegal AHP and improvement of advertising practices. Findings from the evaluation would be applied to improve the program in future effort to address the problem.

4. If the program met the established goals, its strategies would be proposed as a model for next effort for addressing the problems.

The committee established two goals of the program including 1) increase in knowledge on laws related to AHP, attitudes towards legal AHP and awareness of impact from illegal AHP compared to pre-training levels and 2) no legal violations related to AHP in at least 75% of pharmacies attending the workshop.

#### **Program implementation**

The Committee planned and set the date for organizing the activities in the program. The action plan for addressing illegal AHP was as follows.



**Step 1: communication and engagement with the owners of the modern pharmacies**

The Committee sent a letter to all 120 pharmacy owners and/or practicing pharmacists to inform the rationale for this program and invite them to participate. Pharmacy owners who were interested and having some questions in the program were able to direct their questions to the Committee. Subsequently, a meeting was organized by inviting all 120 pharmacy owners to attend in order to inform them on the details of the program and measures for resolving illicit AHP within pharmacies. If pharmacy owners agreed to participate, their informed consent was sought, and arrangements were made for their involvement in all four activities described in step 2.

**Step 2: organization of four activities**

Four activities consisted of three workshops and one pharmacy visit. Three workshops span two days with the following activities.

**Activity 1:** Workshop to enhance knowledge on laws regarding AHP

The workshop to enhance pharmacy owners' knowledge on laws regarding AHP was conducted by experts in the field. Contents of the workshop consisted of knowledge on health products required legal authorization before advertising, statements legally considered as exaggerated claims or over-claims, rules, methods, and conditions regarding legal AHP in pharmacies. The workshop focused on the content of the acts regulating health products that required legal authorization before advertising through various channels such as printed media, leaflets, and posters. Such acts included the Drug Act B.E. 2510 and its amendments (Section 88, Section 88 bis and Section 90), the Food Act B.E. 2522 (Section 40 and Section 41), the Medical Device Act B.E. 2008 and the amendment (Section 57, paragraph one and Section 59), and the Herbal Products Act, B.E. 2562 (Section 70 and Section 74). Moreover, the workshop also provided information on the statements legally

considered as exaggerated claims or over-claims according to the other acts related to health products in pharmacies, such as the Cosmetics Act, 2015, the Hazardous Substances Act, 1992, etc. This workshop was conducted with a plenty of case studies, and examples of statements violating various acts. A session was organized for exchanging knowledge and experiences among the speakers, researchers and workshop attendees. The activity took a total of 4 hours.

**Activity 2:** Workshop to change attitude towards legal AHP

To improve attitude towards legal AHP in pharmacy owners, the workshop provided the information on illegal AHP, its legal consequences to the offenders, negative impacts of misleading AHP on consumers in terms of physical and psychological harms and unreasonable financial loss, possible widespread negative impacts if illegal AHP was further disseminated in the community, and tarnishing of pharmacies' reputation and their future effects on business. The workshop used real-life examples in the discussion. A session was set up for sharing knowledge and experiences among workshop attendees. The activity took a total of 4 hours.

**Activity 3:** Workshop to raise awareness of the effects of AHP

The workshop raised awareness among pharmacy owners by presenting case studies of the impact of illegal AHP by linking the violated action, related laws and legal penalties both imprisonment and/or fines for violators according to the Drug Act B.E. 2510 and its amendments, the Food Act B.E. 2522, the Medical Device Act B.E. 2008 and its amendment, and the Herbal Products Act 2019. The workshop also provided existing measures for addressing the problems of illegal AHP of the Chonburi Provincial Public Health Office, prosecution process, and punishment by the Pharmacy Council of Thailand if the violators was a pharmacist conducting illegal AHP to the public for commercial gain, which was also ethical misconduct.

The workshop also highlighted the potential impact on public if AHP was distorted in order to convince pharmacy owners and practicing pharmacists to aware of the importance of law enforcement by the authorities, leading to consumer protection in advertising, safety in consumption of health products, and prevention of illegal AHP in pharmacies. The activity lasted for a total of 4 hours.

The participants completed the tests before and after workshop attendance. The tests measured their knowledge on laws related to AHP, attitudes regarding legitimate AHP, and awareness of the AHP impact.

#### **Activity 4: Activity to improve AHP**

The researcher allowed participants of workshop a period of 2 weeks to correct their AHP in pharmacies to comply with the law. Subsequently, the researchers who were officials in the Chonburi Provincial Public Health Office visited the pharmacies at the planned schedule to inspect AHP. The inspection focused on legal compliance of various advertising media including printed media, flyers, and posters that appeared in pharmacies, but excluding online media. The inspection was followed by the answers questions on AHP raised by the pharmacies. The researchers then recorded the results of inspection and concluded whether the pharmacies and their advertising media complied with the laws on AHP.

#### **Step 3: Meeting of the Committee**

The meeting of the Committee was organized to evaluate the success of the program. The evaluation involved the comparison of outcomes with the goals set during the Plan phase, and collected information on problems and barriers arising during implementation of the program. These insights were then employed to inform the planning for subsequent cycles of effort.

#### **Outcomes of the program**

Following the workshop, pharmacy owners' knowledge about laws on AHP exhibited a significant

increase from  $6.11 \pm 1.02$  during the pre-workshop period to  $7.26 \pm 2.15$  after workshop (out of a full score of 10.00) ( $P < 0.0001$ ). Furthermore, attitudes about legitimate AHP showed a significant increase from  $3.24 \pm 0.52$  to  $3.72 \pm 0.31$  (full score of 5.00) ( $P < 0.001$ ). Similarly, awareness of the impacts of AHP rose significantly from  $3.07 \pm 0.23$  to  $3.46 \pm 0.22$  (full score of 5.00) ( $P < 0.001$ ).

Inspection of AHP during visits to pharmacies 2 weeks after workshop revealed that all pharmacies refrained from engaging in illegal AHP. This represented a 100% compliance rate among all 120 pharmacies. They demonstrated appropriate adherence to the law with no advertising of health products that required pre-approval from the authorities such as drugs, food, medical equipment, and herbal products. There was also no production of media providing information to clients for commercial gains in the forms of print media, posters, and brochures. There were no exaggerated advertising messages leading to distorted beliefs.

#### **Evaluation of the process**

Evaluation of the process in the Plan phase revealed that timing of each activity needed to be adequately spaced out, as the actual execution required a substantial amount of time. After preliminary communication about the program to the pharmacies and inviting them to participate, the Committee had to meet again to make decision on the details of the program implementation. It was highly possible that each planned activity would be revised during the meeting to ensure program success. The change usually required time to rearrange activities.

In the Do phase, the execution of the plan demanded considerable time for communicate with pharmacies and inviting experts in health product advertising to be speakers in the workshop. In the Check phase, follow-up inspection of pharmacies was the end of the program. However, an additional follow-up for re-inspection at six months later could provide more insights into the change of advertising practice.



Although improvement in certain process of the program was needed from the viewpoints of the Committee, the proposed program and activities effectively addressed the problem of illegal AHP. All 120 pharmacies adhered to legislation governing AHP. These pharmacies in the study could serve as role models for other pharmacies with potentially misunderstandings of advertising regulations. Future effort to curb with the problem of illegal AHP might include knowledge exchanges and expanding the program to all pharmacies in Chonburi, where the 120 pharmacies in the study could take part by providing related advice on AHP to other pharmacies.

Regarding outcomes of the program, both predefined goals were met. Consequently, the Committee endorsed the program for addressing health product advertising in pharmacies and decided to use the evaluation results for improving the future program.

## Discussion and conclusions

The program to tackle illegal AHP in pharmacy settings encompassed multifaceted strategies. First strategy was the workshops for pharmacies with the history of repeated illegal AHP. This instructional intervention was designed to provide knowledge of the laws governing AHP, to exchange knowledge and experiences through various case studies, to inculcate positive attitudes towards legal AHP and to raise awareness of impact from illegal AHP. Second strategy was the follow-up after workshop to inspect whether the participants applied the knowledge from the workshop to correct their advertising practice. The third strategy was the evaluation of the changes in the pharmacy owners in terms of knowledge of laws related to AHP, attitudes towards legitimate AHP and awareness of the impact of illegal AHP and improvement of advertising practices. The fourth strategy was to propose the responsible agencies to endorse the program as a strategy for addressing the problem in the next cycle if the outcomes of the program met the goals of success.

The strategies employed in the study are in line with the concept on the relationship among knowledge, attitude and behavior according to Schwartz's KAP model (13). The model states that knowledge and attitude lead to behavior. All activities in the first strategies focused on building knowledge on related laws, attitude change, and awareness raising for the need to comply with the law on AHP in pharmacies. It also emphasized the participation of all involved parties in the study setting including authorities, modern pharmacy owners, the Chonburi Pharmacist Association, the Chonburi Pharmacy Business Association and the Association of Pharmacy Business in Eastern region. The program emphasized the participation of all parties in analyzing the problem, self-reflection on the problem, and sharing opinions and suggestions, in order to achieve learning for all. The approach was expected to lead to the change in mindset and desirable advertising behavior.

The strategies in the program also align with those for strengthening the pharmacies in the study by Pimonwan Onprasert (14) with the conclusion that workshops to prepare practicing pharmacists should be organized according to the context of the area and necessary information should be thoroughly and continuously disseminated. The strategies in the program also are in line with those in the study by Phongnuwat Sombatphuthon (15) which found that empowerment of modern pharmacies should be actioned by increasing a positive attitude towards compliance with the GPP, promoting activities to exchange and transfer knowledge and supporting useful information and advice.

Prawi Umpan (3) also found that the strategies to curb the problem of illegal radio advertising of health products were training on laws related to AHP, improving the attitudes towards legal AHP, and raising awareness of the impact of illegal AHP, signing a memorandum of understanding with radio stations for compliance with the laws on AHP and establishing

surveillance centers for illegal AHP at the district and community levels.

Program evaluation revealed that, after participating in the workshops, pharmacy owners had a statistically significant increase in knowledge on laws related to AHP, attitudes towards legitimate AHP and awareness of the impact of illegal AHP, compared to those measured before the workshops. Program effectiveness may result from the analysis of problems using data collected in the study setting, participation of all involved parties in the program planning and implementation, and clear communication with pharmacies on the rationale of the program and its benefit to pharmacies and consumers. These factors would contribute to the willingness of pharmacy owners to participate in the program and comply with the laws in AHP.

Activities and outcomes of the program in this study were consistent with those in the study Prawi Amphan (3), which found that, after the intervention, the subjects had a higher level of knowledge about advertising law, attitude on legal advertising and awareness of the impact of advertising, compared to those before the intervention. Findings in this study are also consistent with those in the study by Achara Meedduang (16) which found that dissemination of knowledge through training and news broadcasting towers significantly improved the knowledge and attitudes about “Ya Chud” (multiple drugs packaged in the same container with the intention to be used at the same time) among public. That study concluded that knowledge provision and change of attitudes towards “Ya Chud” among public in the study area with the participation of all sectors were able to address drug use problems in the community.

After the workshop, inspection of AHP during pharmacy visits identified no legal violation. When pharmacy owners become knowledgeable on laws related to health products that require legal authorization before advertising, having a positive

attitude towards legal AHP and being aware of the impact on illegal AHP, they were confident in legal AHP, and willing to do so. As a result, no legal offenses were found in all pharmacies. This findings are consistent with those in the study by Panuchot Thongyang and Komthuan Komwuttikarn (17) in capacity building for modern pharmacies in Samut Songkhram Province to achieve GPP accreditation with the participation of all parties. That study reported that knowledge building on the GPP inspection in pharmacy owners, and exchange of knowledge and assistance from all related sectors led them to have confidence in complying with the criteria. The number of pharmacies with successful GPP accreditation increased from 2 to 22 within 6 months.

### **Suggestions**

Chonburi Provincial Public Health Office should implement the program for addressing illegal AHP developed in this study. However, repeated inspections of AHP in pharmacies are recommended in order to monitor the long term effect of the program and ensure sustainability of the effort. Moreover, Chonburi Provincial Public Health Office should expand the program for addressing illegal AHP in pharmacies to the same problem in other health care settings such as clinics, and private hospitals, etc.

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