

Assessment of the Oral Contraceptive Flowchart at Community Pharmacies in Phasi Charoen District, Bangkok

นิพนธ์ต้นฉบับ

Original Article

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บทคัดย่อ

วัตถุประสงค์: เพื่อประเมินการนำแผนผังการใช้ยาเม็ดคุมกำเนิดมาใช้ในร้านยาในด้าน 1) การให้คำแนะนำปรึกษาตามแผนผังการใช้ยาเม็ดคุมกำเนิด 2) ความคิดเห็นของเภสัชกรต่อการใช้แผนผังการใช้ยาเม็ดคุมกำเนิด และ 3) ความพึงพอใจของผู้รับบริการต่อการได้รับคำแนะนำปรึกษาตามแผนผังการใช้ยาเม็ดคุมกำเนิด **วิธีการศึกษา:** การศึกษาเชิงพรรณนาภาคตัดขวาง กลุ่มตัวอย่างเป็นเภสัชกรผู้มีหน้าที่ปฏิบัติการในร้านยาแผนปัจจุบัน เขตภาษีเจริญ กรุงเทพมหานคร จำนวน 13 คน (ร้านละ 1 คน) และผู้รับบริการ จำนวน 390 คน (ร้านละ 30 คน) เครื่องมือวิจัยเป็นแบบสอบถามของเภสัชกร แบบบันทึกข้อมูลผู้รับบริการ แบบสัมภาษณ์แบบมีโครงสร้าง และแบบสอบถามความพึงพอใจของผู้รับบริการ เก็บรวบรวมข้อมูลระหว่างวันที่ 23 พฤศจิกายน พ.ศ. 2559 ถึง 23 มกราคม พ.ศ. 2560 วิเคราะห์ข้อมูลโดยใช้สถิติเชิงพรรณนา **ผลการศึกษา:** เภสัชกรให้คำแนะนำปรึกษาเรื่องยาเม็ดคุมกำเนิดแก่ผู้รับบริการจำนวน 390 คน รวมทั้งหมด 580 เรื่อง ส่วนใหญ่ให้คำแนะนำปรึกษาคนละ 1 เรื่อง (ร้อยละ 71.79) เรื่องที่ให้คำแนะนำปรึกษามากที่สุดคือ การแก้ไขอาการไม่พึงประสงค์จากการใช้ยาเม็ดคุมกำเนิดคิดเป็นร้อยละ 31.00 (180 เรื่อง) เภสัชกรทุกคนเห็นว่าการนำแผนผังการใช้ยาเม็ดคุมกำเนิดมาใช้ในร้านยาสามารถช่วยเภสัชกรให้คำแนะนำปรึกษาเรื่องยาเม็ดคุมกำเนิดอย่างมีประสิทธิภาพมากขึ้น แต่หากมีการนำแผนผังการใช้ยาเม็ดคุมกำเนิดมาใช้ในการปฏิบัติงานจริงควรแก้ไขปรับปรุงแผนผังในเรื่องของลักษณะทั่วไปและเนื้อหาของแผนผังการใช้ยาเม็ดคุมกำเนิดเพื่อให้เหมาะสมกับบริบทของร้านยามากขึ้น ส่วนผู้รับบริการมีความพึงพอใจโดยรวมต่อการได้รับคำแนะนำปรึกษาตามแผนผังการใช้ยาเม็ดคุมกำเนิดอยู่ในระดับมากที่สุด (ค่าเฉลี่ย 4.53 จากคะแนนเต็ม 5 คะแนน) **สรุป:** การนำแผนผังการใช้ยาเม็ดคุมกำเนิดมาใช้ในร้านยามีประโยชน์ต่อเภสัชกรและผู้รับบริการ และผู้รับบริการมีความพึงพอใจโดยรวมต่อการแนะนำปรึกษาตามแผนผังการใช้ยาเม็ดคุมกำเนิดในระดับมากที่สุด

คำสำคัญ: การประเมิน, แผนผังการใช้ยาเม็ดคุมกำเนิด, ร้านยา, ความพึงพอใจ

Abstract

Objectives: To assess the oral contraceptive pill (OCP) flowchart in community pharmacy regarding 1) the advices of oral contraceptives provided with the use of the OCP flowchart 2) opinion of community pharmacists on the OCP flowchart and 3) satisfaction of customers toward the advices based on the OCP flowchart. **Method:** In this cross-sectional descriptive study, data were collected from 13 pharmacists working in 13 community pharmacies in Phasi Charoen, Bangkok and 390 customers (30 customers from each pharmacy) between 23 November 2016 and 23 January 2017. The instruments were questionnaires, customer collection form and structured interview questionnaire. Descriptive statistics were employed. **Results:** Community pharmacist provided 580 advice topics on oral contraceptive use for 390 customers. Majority of the customers received one advice (71.79%). The most provided advice topic was the management of OCP-related side effects (180 of 580 advices, or 31.00%). All community pharmacists agreed that using the OCP flowchart in drugstore could help them provide OCP advice more effectively. However, before actual implementation, the OCP flowchart needed some improvement including general layout and certain content to suit the context of community pharmacy. It was found that the customers had the highest satisfaction towards the advice based on the OCP flowchart (a mean score of 4.53 of 5 points). **Conclusion:** Oral contraceptive flowchart was useful for the community pharmacists and customers. The customer had the highest satisfaction toward the advices based on the flowchart.

Keywords: assessment, oral contraceptive flowchart, community pharmacy, drugstore, satisfaction

Introduction

With a success in the 1970 national family planning program to decelerate the population increase rate, contraception has been increasingly and widely used among Thais. In 2014, as high as 70% of Thai couples used at least one form of contraception.¹ Two types of contraception, temporary and permanent, have been widely used.^{2,3} Oral contraceptive pill (OCP) has been the most popular temporary

contraception. A survey in 2009 among 12,792,561 reproductive women aged 15 – 49 years found that OCPs were used in the largest proportion of the women (35.00%). They reported that OCPs offered convenience, acceptable effectiveness, infrequent, benign and manageable adverse effects, and a wide variety of products regarding the price.⁴

Despite various advantages of OCPs, previous literature suggested a poor level of the OCP use knowledge. These drawbacks included a lack of knowledge in medications contraindicated with the OCP (97.40%)⁵, severe adverse events prompting a discontinuation and medical attention (68.45%)⁶, contraindications (54.20%)⁷, and poor management when missing at least 2 OCP tablets (39.33%)⁸. In addition, only 4.50% and 1.60% of the OCP users understood the initiation of the 21- and 28-day OCPs, respectively.⁵ On the healthcare provider side, incomplete advice on the OCP use was given to the clients. Specifically only 77.08% of the clients were given information regarding OCP's adverse events.⁹

Drugstore or community pharmacy is the healthcare service firstly sought by patients with mild health problems. In Thailand, a number of community pharmacy have been increasing rapidly. With an increase rate of 26.69% in 2013, a total of 15,359 pharmacies were found nation-wide in 2014.¹⁰ As a number of community pharmacy have been growing, a diverse practice could be expected. The Thai Pharmacy Council has been attempting to establish a standard practice for community pharmacies to follow.¹¹ It has been known that a large number of community pharmacy have been willing to follow this development. However, with a lack of standard practice guideline for specific operations and maneuvers, most community pharmacies could not deliver complete standard services. As suggested by various studies, responsible agencies were expected to establish standard practice guideline for effective community pharmacy services.¹²⁻¹⁵

The recommendation on OCP use is a basic service that should be readily available at the community pharmacy.¹⁶ In Thailand, however, the guideline for recommending the OCP use in community pharmacy has not been established. Diverse and incomplete recommendations on the OCP use could be inevitable and further lead to incorrect use of OCPs. As a result of failed contraception, unintentional pregnancies could lead to unsafe abortion which is one of the major public health problems of the country. There has been an effort to improve the consultation on OCP use at community pharmacy using an OCP flowchart.¹⁷ To facilitate the pharmacist in history taking and recommending the use of OCP, the OCP flowchart depicts the crucial topics from history taking, to selecting OCP products suitable for individual clients, precaution and contraindication in specific clients, how to start the OCP, how to manage the schedule in case of missing doses or losing the pill from vomiting or diarrhea, adverse effects

and how to manage them, and switching from other contraceptive methods to the OCP. However, this flowchart has not been evaluated for its usefulness. To advocate the further use of this OCP flowchart, an evidence of its benefit and information necessary for improvement were highly needed. Specifically, the objectives of this study were to determine 1) frequency of use of each topic on the OCP flowchart in providing care to the clients, 2) opinion of the community pharmacists in using the OCP flowchart, and 3) satisfaction of the clients in receiving consultation based on the OCP flowchart.

In this study, oral contraceptive pill (OCP) included those products with estrogen and/or progesterone with 21 or 28 oral tablets in the package intended for contraception. The OCP flowchart was the diagram of OCP use and related information created by Kingkam Wichit, RPh. The flowchart was presented as a 14-page flipchart. The flowchart covered crucial topics which were placed in order from history taking, to selecting OCP products suitable for individual clients, precaution and contraindication for specific clients, how to start the OCP, how to manage the schedule in case of missing doses or losing the pill from vomiting or diarrhea, adverse effects and how to manage them, and switching from other contraceptive methods to OCP.¹⁷ The consultation based on the OCP flowchart on various topics including how to start in clients who had never used OCP, how to replace the pill in case of losing a pill from vomiting or diarrhea, how to switch from other contraception method to the OCP, what to do if missing a pill, contraindication of the estrogen-containing OCPs. In addition, the flowchart also prompted the pharmacists to remind the clients on the possible adverse effects relevant to specific type of OCPs including nausea and vomiting, dizziness, excessive vaginal discharge, melasma, migraine headache, breast engorgement and/or tenderness, edema, dysmenorrhea or cramp, menstrual spotting, amenorrhea, increased appetite, weight gain, tiredness/fatigue, acne, oily scalp and face, hirsutism, depression, fungal vaginal infection, agitation, dysfunctional uterine bleeding, loss of libido, hair loss, and dry skin. In this study, we included only pharmacists working full-time in the independent first class drugstores in the district of Phasi Charoen, Bangkok.

Methods

In this cross-sectional descriptive study, we recruited participants, both pharmacists and customers, with the

purposive sampling method. The pharmacist participants were those working full-time in the independent first class drugstores in the district of Phasi Charoen, Bangkok. Only one pharmacist was selected from each drugstore. With 13 stores to study, a total of 13 pharmacists were recruited.¹⁸ For customer participants, the sample size was estimated based on Cochran method.¹⁹ The estimation was based on a 95% confidence level, a sampling error rate (d) of 5%, with a proportion (p) for unknown or infinite size of the population. As a result, 390 customers, or 30 per store, were needed. To be eligible, these customer participants were women aged 20 or older, requesting OCPs for contraception for themselves. There had to be able to communicate in Thai. Those who had been using OCP for 90 days or greater with no OCP-related problems were excluded from the study. The study was conducted from November 23, 2016, to January 23, 2017.

Instruments

Data collection tools included four sets of questions. In the first set of questions, we asked for demographic information of the pharmacist participants, demographic information of the drugstores, and the existing OCP use counseling service provided to the customers, for example, history taking and OCP recommendations. The second set of the questions recorded the customer information requested by the pharmacist participant. This questionnaire was modified from the customer data collection form on providing knowledge, recommendation, and consultation on family planning for reproductive women and the spouses in the research project entitled health promotion in the drugstore in the Bangkok metropolitan.²⁰ This form collected demographic information of the customer, recommendations on the OCP to the customer, and summary of the OCP use counseling for each customer according to the OCP flowchart.

The third set of the questions asked the pharmacist participant their opinion on the use of OCP flowchart. With open-ended format, the questions asked about the flowchart's general appearance, content, convenience to use, problems found in the use, and benefits. Finally, the fourth set of six questions asked the customer participants about their satisfaction toward the OCP use counseling service. The questions asked the customers to rate their satisfaction on the readiness of the pharmacist in providing OCP use advice, history taking, actual advice on the OCP use, answering the customer's questions, the overall satisfaction on the OCP use,

and the future use of the OCP use service. The response was a rating scale with 1-the least satisfied to 5-the most satisfied. The total score was achieved by summing up the score of each of the six questions and dividing by 6. This customer's overall satisfaction levels on the OCP use counseling service were categorized as the most satisfied (4.51 - 5.00), highly satisfied (3.51 - 4.50), moderately satisfied (2.50 - 3.50), slightly satisfied (1.51 - 2.50), and the least satisfied (1.00 - 1.50).²¹ The questionnaire was tested for content validity by three experts.

Data collection procedure

Data collection form and OCP flowchart were given to 13 participating drugstores. Pharmacist participants were instructed by the researchers to use the flowchart. The pharmacists were asked to provide OCP use counseling using the flowchart and record the data in the forms at the end of the service. They were also asked to ask to customer to fill in the customer satisfaction questionnaire (4th questionnaire). The researchers contacted the pharmacist participant once a week by the actual visit or telephone call to define the problems if any, and provide the assistance if necessary. For each drugstore, once a total of 30 customers were provided the OCP counseling service, the researchers interviewed the pharmacist participant using the third questionnaire.

This study was approved by the Ethics Committee for Human Research in Health Science of Naresuan University on November 22, 2016 (Issue no. 691/59).

Statistical Analysis

Descriptive statistics were presented as frequency with percentage, mean with standard deviation, and median with inter-quartile range (IQR), when applicable. Data from structured interview with the pharmacists on the use of OCP flowchart were analyzed with content analysis. Each of the findings was grouped and counted. The customer satisfaction on the OCP use counseling was presented as frequency and percentage of each satisfaction level.

Results

The first part was the general and demographic information of the participating pharmacists. Most pharmacists were female (11 of 13), with an average age of 29 years. All

pharmacists finished the bachelor's degree, with a mean of 4 years in working in community pharmacy. With an average of 60 customers per day, there were 8 customers per day by average asking for OCP use counseling. Most drugstores had one pharmacist on duty on a daily basis with no assistant. Before dispensing OCP, 8 of 13 pharmacists asked necessary information in the history taking which included verifying the OCP user, drug allergy history, and existing illnesses or health problems. All pharmacists provided OCP use counseling with no educational materials for assistance. Six of them had no guideline for follow-up and four pharmacists provided educational leaflet of OCP use. Five minutes per customer by average were used in the OCP use counseling. (Table 1).

Table 1 Characteristics of the pharmacist and drugstore participants and the OCP use consultation service (N = 13).

Characteristics	N (%)
Pharmacist participants	
Gender	
Female	11 (84.61)
Male	2 (15.39)
Age (yrs), median ± IQR = 29 ± 5.25; range 25 - 53	
Education level	
Bachelor's degree	13 (100.00)
Experience in community pharmacy (yrs), median ± IQR = 4.0 ± 4.0; range 0.5 - 30.0	
Drugstores	
Number of customers per day, median ± IQR = 60.0 ± 25.0; range 30 - 200	
Number of customers requesting OCP product and/or consultation per day, median ± IQR = 8.0 ± 2.75; range 3 - 21	
Number of pharmacists on duty per day	
1	11 (84.61)
2	2 (15.39)
Number of pharmacy assistants	
0	9 (69.23)
1	3 (23.08)
2	1 (7.69)
OCP use consultation service	
History taking and/or drug-related problems (DRP) before OCP dispensary	
No history taking or DRP verification	0
Limited history taking	8 (61.54)
Thorough history taking	5 (38.46)
Protocol/guideline on OCP use consultation (more than 1 mode was applicable)	
No protocol/guideline	0
Verbal consultation with no written educational material used	13 (100.00)
Written educational materials used	0
	(contd.)

Table 1 Characteristics of the pharmacist and drugstore participants and the OCP use consultation service (N = 13) (Contd.).

Characteristics	N (%)
Protocol/guideline on monitoring OCP use	
No protocol/guideline	6 (46.15)
Making an appointment (phone call or in-store) for all customers	0
Making an appointment (phone call or in-store) only for customers with the first OCP use	1 (7.69)
Making an appointment (phone call or in-store) only for customers with OCP related problems	3 (23.08)
Making an in-store appointment only for customers with the first OCP use or with OCP-related problems	3 (23.08)
Making a telephone call appointment only for customers with the first OCP use	0
Making a telephone call appointment only for customers with the OCP-related problems	0
Availability of educational materials on the OCP use	
No	9 (69.23)
Yes (leaflets)	4 (30.77)
Number of minutes of OCP use consultation service, median ± QD = 5 ± 2.50; range 5 - 10	

Of the 390 customers, the majority were 30 years old, with high-school diploma or equivalent (44.10%), private sector employees (52.82%), with a monthly income of 15,001 - 20,000 baht (37.89%), having no existing illnesses or health problems (92.80%), using no medications (95.89%), having no allergies to medications, food, herbs or nutritional supplements (98.20%), not smoking (99.49%), and having no child (71.54%) (Table 2).

Table 2 Characteristics of the customers (N = 390).

Characteristics	N	%
Age (yrs), median ± IQR = 30 ± 6; range 20 - 57		
Education level		
Elementary school	22	5.64
Middle school	38	9.70
High school or equivalent	172	44.10
Bachelor's degree or equivalent	157	40.30
Post-graduate degree	1	0.26
Occupation		
Business employee	206	52.82
Labor	76	19.49
Small business owner	70	17.95
Government employee	22	5.64
Shopkeeper	4	1.03
Unemployed	12	3.07
Monthly income (Baht) (n = 388)		
≤ 10,000	53	13.66
10,001 - 15,000	108	27.84
15,001 - 20,000	147	37.89
20,001 - 25,000	35	9.02
25,001 - 30,000	36	9.28
≥ 30,000	9	2.31
		(Contd.)

Table 2 Characteristics of the customers (N = 390) (Contd.).

Characteristics	N	%
Underlying disease		
No	362	92.80
Yes	28	7.20
Hypertension	9	32.15
Migraine without aura	4	14.28
Hypothyroidism	3	10.72
Hyperthyroidism	3	10.72
Asthma	2	7.14
Dyslipidemia	1	3.57
Diabetes mellitus	1	3.57
Allergic rhinitis	1	3.57
Peptic ulcer	1	3.57
Hypertension and dyslipidemia	2	7.14
Hypertension and arrhythmia	1	3.57
Medication		
No	374	95.89
Yes	16	4.11
Amlodipine	2	12.50
Levothyroxine	2	12.50
Atenolol	1	6.25
Enalapril	1	6.25
Propylthiouracil	1	6.25
Methimazole	1	6.25
Theophylline	1	6.25
Cetirizine	1	6.25
Metformin and glipizide	1	6.25
Amlodipine, atenolol และ simvastatin	2	12.50
Others	3	18.75
Allergy to drugs/food/herbs/other products		
No	383	98.20
Yes	7	1.80
Sea food	3	42.88
Penicillins	1	14.28
Tetracycline	1	14.28
Clinدامycin	1	14.28
Norfloracin	1	14.28
Smoking status		
No	388	99.49
Yes	2	0.51
Occasional smoking	1	50.00
Less than 15 cigarettes per day	1	50.00
15 or more cigarettes per day	0	0
Number of children		
None	279	71.54
Having children (median ± IQR = 1.0 ± 0.0; range = 1 – 4)	111	28.46
Number of consultation topic received* (N = 390)		
1	280	71.79
2	61	15.64
3	18	4.62
4	31	7.95
Duration of consultation per customer (min.), median ± IQR = 10.00 ± 3.50; range = 5 - 30		

* A given customer could receive more than one consultation topic.

Effects of using the OCP flowchart for counseling

Of all 580 OCP use counseling topics provided to 390 customers, most customers received one topic (71.79%) and 7.95% received the most number of topics (4 topics). An average of 10 minutes per customer was used for counseling on the OCP use (Table 2). The most provided topic was managing adverse effects of the OCP which accounted for 180 of 580 topics (31.00%). The most three mentioned effects included nausea and vomiting (23.89%), edema (19.45%), and oligomenorrhea (11.68%) (Table 3).

Table 3 The OCP use consultation using the flowchart (390 patients with 580 topics provided).

Topic of OCT use consultation	N	%
Managing OCP related adverse effects		
No	400	68.97
Yes	180	31.03
Nausea/vomiting	43	23.89
Edema	35	19.45
Oligomenorrhea	21	11.68
Acne	12	6.67
Dizziness	10	5.56
Menstrual spotting	10	5.56
Migraine headache	9	5.00
Increased appetite	8	4.44
Weight gain	8	4.44
Amenorrhea	5	2.78
Breast engorgement and/or tenderness	4	2.22
Melasma	3	1.67
Oily scalp and face	3	1.67
Excessive vaginal discharge	2	1.11
Agitation	2	1.11
Dysmenorrhea or cramp	1	0.55
Tiredness/fatigue	1	0.55
Hirsutism	1	0.55
Hair loss	1	0.55
Dry skin	1	0.55
Management of missed doses	143	24.66
General management for dose missing	106	74.13
When missing 2 or more doses	22	15.38
When missing one dose	15	10.49
How to start OCP (first-time user, re-starter, post-partum)	50	8.62
Start on the first day of menstruation	39	78.00
Quick start	11	22.00
Management of incorrect use of 28-day OCP	46	7.92
Start the next pack after the end of the menstruation	42	91.30
Pick the pill corresponding to the labeled date	2	4.34
Start the next pack on the first day of the menstruation	1	2.18
Start the next pack after the 7 pill-free days	1	2.18
Management of missed doses caused by diarrhea and/or vomiting	35	6.03
How to recognize OCP-related adverse effects	32	5.52
How to recognize drawbacks of the OCP long-term use	20	3.44
Less than 5 years	4	20.00
5 – 10 years	11	55.00
More than 10 years	5	25.00
Management of delayed dosing for two days or more	18	3.10
Management of incorrect use of 21-day OCP	14	2.41
Start the next pack after the end of the menstruation	13	92.86
Take the pill continuously without 7 pill-free days	1	7.14
Management of the new pack with a one-day dosing delay	11	1.90
Management of switching from other contraceptive method (injectable form) to the OCP	10	1.72
Referral to the hospital	7	1.20
Suspected post-menopausal symptoms	3	42.88
Past positive result of cervical cancer	1	14.28
Breast exam with lump	1	14.28
Disrupted supply of hypertensive medications	1	14.28
Amenorrhea of more than five years	1	14.28
Management of underlying health problems in relation to the OCP	7	1.20
Hypertension	5	71.42
Hyperthyroidism	1	14.29
Hypertension and arrhythmia	1	14.29
Management of the OCP with breast enlarging effect	6	1.03
Management of the contraindicated case of estrogen-containing OCP (a case of blood pressure higher than 160/95 mmHg)	1	0.17

In using the OCP flowchart, eight customers were unable to follow the OCP use recommendation. Among these eight customers, three experienced adverse effects of the OCP and needed a low-estrogen OCP product, i.e. to change from the product with 0.03 mg ethinylestradiol and 0.15 mg levonorgestrel that caused nausea to a product with a low-

estrogen content. However, they could not afford such low-estrogen products which were more costly. Another five customers needed more suitable OCP products but the same products were preferred. The customers were worried that they would lose beneficial effects of the old products. For example, the product with lower estrogen was recommended to alleviate the edema caused by the product of 0.035 mg ethinylestradiol and 2 mg cyproterone. However, the customer preferred to continue benefiting the anti-acne and skin nourishing effects of the old product.

Opinion of pharmacists toward using the OCP flowchart

The findings from interviewing 13 pharmacists on five issues were as follows. Regarding the general appearance of the OCP flowchart, all agreed that texts were presented with appropriate fonts' type and size, and layout. However, seven of them reported that the size of the subtopic headline font was too small to separate different subtopics apart. Since the flowchart contained several pages, the arrows to lead from one text box to the other in a given page were functioning well; however those connecting between pages were not.

In terms of content of the OCP flowchart, all pharmacists agreed that the content layout and order offered easy reading. The text was presented with a concise, appropriate and easily understood written language. Most pharmacists (9 of 13) reported that the flowchart presented all necessary information on the OCP use; while four of them stated that the flowchart lacked some crucial detail such as interactions between OCP and other medications, selection of the OCP for breast-feeding women, and lifestyles that caused dysfunctional uterine bleeding. The lack of this information made the pharmacists lose the opportunity to use necessary information to manage all aspects of the issues found in the customers.

Regarding the convenience in using the OCP flowchart, the majority of pharmacist participants (10 of 13) reported that to effectively use the flowchart pharmacists needed be familiar with the topics and their order. Otherwise, waste of time and loss of the customer's trust could be a result.

The issues surrounding the use of OCP flowchart were reported by 11 pharmacists as follows. In terms of content access, some difficulty in reaching the desired page was reported by 9 pharmacists. Four pharmacists reported the need of information regarding drug interaction, selection of OCP for breast-feeding women, and lifestyle modification in case of dysfunctional uterine bleeding. To make a sound

decision, a comparison of OCP products regarding pharmacological effects in relation to the need in specific customers was reported necessary.

In terms of the usefulness, all pharmacists stated that the OCP flowchart helped them update their pharmacology of OCP, and aide their history taking, problem identifying, selecting appropriate OCP products for specific customers, and providing a complete and accurate OCP use advice. With these benefits, pharmacists were more confident in providing the OCP use counseling which could potentially result in a trust among the customers. With the availability of the hormone components in each commercial product on the back of the OCP flowchart, a few pharmacists reported a faster product selection could be achieved. In addition, the most useful topic in the OCP flowchart was adjusting hormone content to manage adverse effects of the OCP, followed by the management when missing doses.

All pharmacists perceived that the use of OCP flowchart could benefit the customers especially on problem identifying and solving, and the availability of more complete and accurate information of the OCP use. They asserted that the future use of OCP flowchart in the drugstores could improve the customers' knowledge of the effective contraception which could further alleviate the unwanted pregnancy and unsafe abortion. The availability of pharmacists to provide OCP use and contraception counseling could add a considerable value to the pharmacy service, in addition to the product availability service.

Customers' satisfaction toward the counseling using the OCP flowchart

Of a total score of 5, the average total score of 4.53 points was found. The three most approved aspects were the intention to use the service in the future (4.63 points), followed by the satisfaction on the present recommendation (4.61 points), and overall satisfaction on the OCP counseling service (4.60 points). The least satisfied aspect was history taking of the pharmacist (4.41 points) (Table 4).

Table 4 Customer's satisfaction toward the OCP use consultation service using the OCP flowchart (N = 390).

Satisfaction aspects	Mean \pm S.D.	Satisfaction level
1. Intention to use the service in the future	4.63 \pm 0.53	Highest
2. Satisfaction on the present recommendation on the OCP use	4.61 \pm 0.56	Highest
3. Overall satisfaction on the OCP counseling service	4.60 \pm 0.55	Highest
4. Readiness of the pharmacist in providing OCP counseling service	4.46 \pm 0.56	High
5. Answers provided by the pharmacist	4.45 \pm 0.58	High
6. History taking of the pharmacist	4.41 \pm 0.61	High
Overall	4.53 \pm 0.57	Highest

Discussions and Conclusion

In this present study, we tested the OCP flowchart in providing care to the customers by 13 community pharmacists. As we found a small proportion of the customers with an age of 50 years or older (1.79%), they asked for OCP for post-menopausal symptoms including hot flush, agitation, and oligomenorrhea.²² The pharmacists thus recommended a referral for a thorough medical examination with the physician.

Among the recommendation topics provided, about one-third were adverse effects of the OCP. This suggested that at present a large number of OCP users experienced more adverse effects than other OCP-related problems. Furthermore, almost two-thirds of the clients (62.22%) did not recognize that these adverse effects were OCP-related. This could be in part because some clients did not pay much attention on related information. This finding was consistent with the work of Chaimali which found that only 37.55% of OCP users made an effort to understand the adverse effects information before every use and 37.10% once there was a trade-name switching; while 25.35% never learned the information.²³ On the other hand, pharmacists could also be a part of this drawback since they also could provide incomplete information. A study of Chalongsuk and colleagues revealed that only 11.90% of the clients reported that they received the information about OCP adverse effects. However, the information regarding OCP use, trade name, and other aspects of OCPs was reportedly provided to a greater proportion of the clients.⁵ In accordance with Chalongsuk study, Kontiang and co-workers also reported that complete information about the OCP adverse effects was provided by only 77.08% of the healthcare providers; while other

information including OCP name and indication was provided by a greater proportion of the providers.⁹

Among those not accepting the recommendation (2.05%), certain factors such as socioeconomic status and social norms could have been influential. A study by Muanda and colleagues suggested that the access to modern contraceptives was detrimentally affected by five factors including the fear of adverse effects, cost, influence of the social norms, culture and peers, family pressure, and the lack of knowledge or the inaccurate information received.

Opinion of pharmacists toward the OCP flowchart

The OCP flowchart helped pharmacists conduct a more thorough history taking and provide an accurate and complete consultation. Hence, service at the community pharmacy could be more effective. Our findings were consistent with the works of Sangkar and Hongsamoot¹² and Buanuy¹⁴ which suggested that for the community pharmacists to provide service effectively, specific evidence-based practice protocols or guidelines should be readily available and supported by the responsible parties. The benefits to the customers were also evident. These benefits included the knowledge and practice of effective contraception, OCP-related problem identification, solving, and prevention. The ultimate benefit of a decrease in unplanned pregnancy, unsafe abortion and poor reproductive health could be achieved. Studies of Kasiwong and colleagues²⁵ and Vogt and Schaefer²⁶ also revealed that the OCP educational materials could improve knowledge scores significantly. Rodriguez and co-workers found that contraceptive services helped teenagers choose a more effective contraceptive method.²⁷ Guttmacher Institute in the USA reported that contraception consultation service reduced the risk of unwanted pregnancy by 2 to 3 folds, unplanned delivery by 3 folds, and delivery-related death by half. In addition, cost-saving in post-partum care for the mother and child was as high as 11.30 thousand million US dollars.²⁸

The customer's satisfaction toward the consultation using the OCP flowchart

We found that the customers were highly satisfied with the OCP use consultation with a mean score of 4.41 of the total score of 5 points. This high level of satisfaction could have been a result of a comparison with the customer's past experience where consultation service was not available. More trust with the pharmacist could be a result. In England,

the National Health Service reported that the privacy in the OCP use consultation in drugstores was perceived by all customers (100.00%). The customers were satisfied the consultation and would recommend the service to their peers (96.90% and 94.44%, respectively).²⁹

In terms of limitations, our study was conducted for a relatively short period of time, therefore certain OCP related problems were not found and the benefits of the OCP flowchart to handle such problems could not be examined. Studies with a longer period should be conducted to allow for more diverse problem coverage. In addition, since our study was conducted only in the district of Phasi Charoen, Bangkok, the results could be generalized to the other parts of the country with some level of caution. Studies with diverse populations should be conducted. Furthermore, factors potentially influencing the effective use of the OCP flowchart should be thoroughly investigated.

In conclusion, among the 580 OCP-related consultation topics provided by the community pharmacists, adverse effects were the most provided topic. Pharmacist participants reported that complete and accurate identification and management of the OCP-related problems could be facilitated by using the OCP flowchart. They indicated the need for an improvement of the OCP flowchart regarding the layout and content. The customers were highly satisfied with the OCP use consultation using the OCP flowchart.

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