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## Understanding the medication experiences of Thai patients attending a medication therapy management clinic

Phantipa Sakthong<sup>a</sup>, Win Winit-Watjana<sup>b</sup> and Rungpetch Sakulbumrungsil<sup>c</sup><sup>a</sup>Department of Pharmacy Practice, Faculty of Pharmaceutical Sciences, Chulalongkorn University, Bangkok, Thailand,<sup>b</sup>Department of Pharmacy Practice, College of Clinical Pharmacy, University of Dammam, Dammam, Saudi Arabia,<sup>c</sup>Department of Social and Administrative Pharmacy, Faculty of Pharmaceutical Sciences, Chulalongkorn University, Bangkok, Thailand,

### Abstract

The study aimed to explore Thai patients' medication experiences in five domains, i.e., attitudes, understanding, expectations and wants, concerns, and convenience of medicine use. This cross-sectional descriptive study was carried out using a qualitative interview with some quantitative queries in patients attending the Medication Therapy Management (MTM) Clinic of the Faculty of Pharmaceutical Sciences at Chulalongkorn University between October 2010 and March 2011. The eligibility criteria included adults aged over 20, taking medication continuously for at least three months, understanding the Thai language with no cognitive impairments, and willing to participate in the study. Eligible patients were interviewed face-to-face using open-ended questions about their medication experiences in five domains. All data were coded and analyzed using a content analysis and descriptive statistics. A convenience sample of 25 patients completed the study. Their mean age was  $56.9 \pm 13.5$  years (range: 24 – 79) and slightly more than half (52 %) were female. The most common diseases from which they suffered were hypertension (84 %), hyperlipidemia (52 %), and diabetes (16 %). Almost all of them disliked taking their medicines, but did it owing to perceived necessity. Most patients did not know about the medicine side-effects, followed by the medicine names, strengths, and goals of treatment. They mostly expected that their medications should relieve the symptoms or cure the diseases and were concerned about the adverse effects. Additionally, the majority reported it was convenient to take their medicines. Patients' medication experiences in various domains are crucial for drug therapy and pharmaceutical care. These could help identify, prevent and resolve patients' drug-related problems from their own perspectives.

**Key Words:** Medication experiences, Pharmaceutical care, Medication therapy management, Drug-related problems, Patients, Thailand

### Introduction

Patient-centered medicine (PCM) is one of the six goals of medicine in the 21<sup>st</sup> century [1]. The PCM focuses on patients' psychosocial context that enables healthcare providers to understand more about patients' own perceptions of the disease and treatment [2]. Medicines, as part of major treatment components, can cause negative impacts, such as adverse drug effects, fear,

*Correspondence to:* Phantipa Sakthong, Department of Pharmacy Practice, Faculty of Pharmaceutical Sciences, Chulalongkorn University, Phyathai Road, Pathumwan, Bangkok, 10330, Thailand. e-mail: phantipa.s@chula.ac.th; psakthong@gmail.com

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misunderstanding, irrational drug use, inconvenience, or non-adherence. These problems are regarded as drug-related problems (DRPs), which may result in a burden to patients' lives, i.e. treatment failure or further complicated illnesses. In the US, the cost of DRPs in 2001 was approximately 177.4 billion dollars [3]; this cost estimate is not available in Thailand or other countries. However, the drug expenditure in Thailand usually accounts for 30-35 % of all healthcare expenses [4], compared with developed countries (10-20 %) [5]. The high drug consumption in the country can partly be attributed to many patients' DRPs.

Cipolle and his colleagues [6] defined pharmaceutical care (PC) as "a patient-centered practice in which the practitioner assumes responsibility for a patient's drug-related needs and is held accountable for this commitment". Thus, the patient-centered approach is the cornerstone of the philosophy for providing PC. In this PC approach, practitioners should understand patients' DRPs from their perspectives by paying attention to their thoughts, feelings or psychosocial needs as well as their physical demands. To achieve the patient-centered care, PC providers have to explore patients' medication experiences including attitudes, understanding of drug therapy, expectations and needs, concerns, and convenience and behaviors of medication intake [6]. Most studies on this issue were conducted in the US [7-10], but little was known about patients' medication experiences in Thai patients. Therefore, the purpose of this study was to investigate Thai patients' medication experiences in five domains, i.e., attitudes, understanding, expectations and needs, concerns, and convenience and related behaviors about medication use.

## Methods

This cross-sectional descriptive study mainly employed a qualitative interview, which was supplemented with some quantitative questions. It was part of the pilot project for developing patient-centered pharmaceutical care, of which objective was to identify, prevent and resolve the DRPs of patients with chronic diseases from patients' perspectives. This study was approved by the Ethics Committee of the Faculty of Pharmaceutical Sciences at Chulalongkorn University in Bangkok.

*Patients and eligibility.* A convenience sample was identified in patients who attended the Medication Therapy Management (MTM) Clinic of the Faculty of Pharmaceutical Sciences at Chulalongkorn University from October 2010 to March 2011. The eligible criteria included adults aged over 20, taking medication continuously for at least three months, understanding the Thai language with no cognitive impairments, and were willing to participate in the study. The required sample size depended on the data saturation.

*Study instruments.* An interview questionnaire was specially devised to collect patients' medication experiences; it was checked for face validity by two experts in social pharmacy. The questionnaire consisted of three parts. Part 1 included patients' characteristics (i.e., gender, marital status, and highest education), whereas Part 2 contained clinical data in terms of their diseases, medication use, perceptions of disease control (or the locus of control), and patients' own health status. Part 3 with open-ended questions was to elicit patients' medication experiences as follows:

1. Understanding of medication use: The patients were asked if they knew about their medicine names, strengths, indication, goals of medicine use, dosage regimens, and side-effects (including all types of adverse drug effects). A 7-point Likert scale (1 = know nothing at all and 7 = know all) was provided to assess the six aspects. This made up the score of 42, with high scores indicating more understanding. In this study, the Cronbach's alpha of this scale was 0.87, which signified the high internal consistency reliability [11].
2. Attitudes towards medication use: How do you feel about taking the medicines?
3. Expectations and wants for medication use: What do you expect or want for taking medications?
4. Concerns about medication use: What are you worried or concerned about taking them? Do you have any medicine problems?
5. Convenience and related behaviors about medication use: Do your medicines cause you any inconvenience? Have you ever forgotten or stopped taking them?

*Data collection.* Eligible patients, after providing their informed consent, were allocated the classification codes, such as P01 or P14 the meaning the patient number 1 or 14, to facilitate the data analysis. They were then interviewed face-to-face using the specially designed questionnaire by the researcher (PS) in the counseling room of the MTM Clinic. Each interview lasted for approximately 1 – 2 hours and was audiotaped with patients' permission. To acknowledge their contributions to this study and travel costs, everyone received a stipend of 200 baht (or US\$ 6.5) after the interview.

*Data analysis.* All qualitative data in Part 3 were carefully transcribed with the verbatim transcription and then summarized as appropriate themes based on a content analysis. Regarding quantitative data, they were collated and analyzed using descriptive statistics in PASW Statistics 17 (SPSS-IBM Co., Chicago, IL). Percentages and frequencies were computed for categorical variables, but the means, standard deviations (SD), and ranges (minimum – maximum) were used for continuous variables, such as patients' age and the numbers of diseases and medicines.

## Results

At the beginning, 34 patients were approached, but 25 of them were eligible for the study. Their characteristics together with clinical data are demonstrated in Table 1. Of 25 patients, the mean age (mean  $\pm$  SD) was  $56.9 \pm 13.5$  years (range: 24 – 79) and 52 % were female. Half of them (48 %) were married and most patients at least had finished at the college level. The most common conditions from which they suffered were hypertension (84 %), hyperlipidemia (52 %), and diabetes (16 %). The average numbers of diseases and daily medications were two (or  $2.4 \pm 1.0$ ) and four (or  $3.6 \pm 1.8$ ), respectively. The majority perceived their diseases as well-controlled and rated their health status at about 70 %. Their experiences in five domains of medication use were elaborated below.

*Understanding of medication use.* Patients' overall understanding score was  $28.2 \pm 8.6$  (range: 16-42), out of 42 in total (data not shown in the table). When considering individual aspects, they mostly knew the dosage regimens, e.g., one tablet once or twice daily, with an average score of  $6.9 \pm 0.3$ , followed by the indication ( $6.3 \pm 0.9$ ), goals of therapy ( $4.4 \pm 1.9$ ), and drug names ( $4.0 \pm 2.5$ ). However, they gained less insight into drug strengths ( $3.6 \pm 2.4$ ) and side effects ( $3.0 \pm 1.6$ ).

*Attitudes towards medication use.* Almost all (24 patients) disliked taking medicines for various reasons. These included fear of adverse effects and drug accumulations in the liver or kidneys, feeling bored with having many medicines every day, difficulty in swallowing due to big pills, perceptions of toxic chemicals, drug expenses, denial of being ill, burden in daily as to whether already having them, and bad taste. Moreover, many patients preferred some modalities of alternative medicine, such as herbal products, vitamins, food supplements, exercise, diet control, and meditation. Given the negative attitudes, most patients also gave a couple of reasons why they still had to take the medicines, i.e., for relieving or curing the diseases, or being convinced by physicians or pharmacists albeit little or no symptoms (i.e., hypertension). Two patients expressed a mixed feeling: they continued having their medications, but would stop them straightaway if they brought about any side-effects. Additionally, some examples of self-motivation for receiving medicines embraced:

“I saw my parents with poorly controlled blood pressure experienced a lot of complications.” (P05)

“It is a rule: if you are sick, you need to take medicines.” (P15)

“I am still taking my meds even though they do not work or cause me some side-effects, because I trust in my doctor.” (P04 – Parkinson patient)

*Expectations and needs for medication use.* Nearly all (24 patients) expected that their medicines should be able to control the symptoms, cure all diseases, had no side-effects, or might not make their conditions worse. As some of them needed to pay for medicines themselves, they wished to see medicines with reasonable prices and good quality, especially for generic and branded drugs being similar prices and quality. Aside from that, some patients asserted that medications were not their first choice but rather a last resort, as they wanted to try complementary and alternative medicine first, for example, herbal medicines, food supplement or natural treatment. One patient did not expect anything from their medication use and another did not adhere to his medication. Nevertheless, a few did reflected on other interesting issues as follows:

“Drug treatment should go together with diet control and exercise.” (P03)

“I feel surrendered and rely on medicines for life.” (P17)

*Concerns about medication use.* About half of them (13 patients) were concerned about medication side-effects, especially for drug accumulations in the kidneys and long-term effects. Some also worried about the adverse effects they had previously experienced. For example, a 67-year-old woman (P09) developed side-effects from almost every medicine she took until she feared taking it. She asked her doctor to stop anti-cholesterol agents because she developed rhabdomyolysis and wanted to try diet control. She also told the researcher that she wanted pharmacists to tell patients about possible drug side-effects or to provide a drug leaflet when dispensing. She said if she knew about drug side-effects beforehand, she would have less worried about taking it because she would know what drug side-effects might happen and how to deal with them.

In addition to the unwanted effects, the patients expressed concern over medicine prices and effectiveness. For example, a Parkinson patient described that her medication did not only improve her symptoms, but also made her worse owing to the side-effects. Thus, she was very worried about her medicine effectiveness. However, the other half (12 patients) had no worries about medication side-effects. The reasons for this were that they never suffered from any adverse effects, took low dose drugs as told by the doctors, took medications for a long time, or got enough medicine information from pharmacists, physicians, or self-searching. Regarding drug information, it is crucial for patients' concerns. An intriguing example was a 24-year-old woman suffering from dry cough for one year; this

**Table 1** Patients' characteristics and clinical data (n = 25)

Characteristic	Number of patients (%)
Age (years)	
Mean $\pm$ SD	56.9 $\pm$ 13.5
Range	24 – 79
Gender	
Female	13 (52.0)
Male	12 (48.0)
Marital status	
Married	12 (48.0)
Single	9 (36.0)
Divorce/separated	4 (16.0)
Highest education	
Primary/secondary school	4 (16.0)
High school	3 (12.0)
Undergraduate	12 (48.0)
Graduate	6 (24.0)
Medical condition (disease) <sup>a</sup>	
Hypertension	21(84.0)
Diabetes	4 (16.0)
Hyperlipidemia	13 (52.0)
Other diseases	
Gout	3 (12.0)
Allergy	3 (12.0)
Gastritis	3 (12.0)
Insomnia	2 (8.0)
Constipation	2 (8.0)
Arthritis	2 (8.0)
Parkinson	1 (4.0)
Migraine	1 (4.0)
Stroke	1 (4.0)
Vertigo	1 (4.0)
Prostate hyperplasia	1 (4.0)
Venous thromboembolism	1 (4.0)
Endometriosis	1 (4.0)
Number of diseases	
Mean $\pm$ SD	2.4 $\pm$ 1.0
Range	1 – 5
Number of medicines	
Mean $\pm$ SD	3.6 $\pm$ 1.8
Range	1 – 7
Patient perception of disease control	
Poor	3 (12.0)
Fair	2 (8.0)
Average	5 (20.0)
Good	15 (60.0)
Health status rated by patients (full score =10)	
Mean $\pm$ SD	6.9 $\pm$ 1.3
Range	0.4 – 1.0

<sup>a</sup>Can have more than one disease.

**Table 2** Summary of the most common themes of each of medication experience domains

Domain	The most common themes of each of medication experience
<b>Attitudes</b>	Dislike taking medications but did it owing to perceived benefits (majority). The reasons for this included fear of drug allergy, drug accumulations in the liver or kidneys, taking medicines representing unhealthy or sick people, difficulty in swallowing, feeling bored and burdened with taking medicines every day, drug expenses.  Like using alternative medicines (1/3) such as herbs, vitamins or food supplement, exercise and meditation.  The reasons of taking medicines were to alleviate symptoms and to cure diseases.
<b>Understandings</b>	Knowing dosage regimens and indications (>50 %)  Knowing the drug names and goals of drug therapy (~50 %)  Knowing drug side-effects and drug strengths (<50 %)
<b>Expectations</b>	Symptoms relief, cure diseases, no drug side-effects, reasonable drug prices
<b>Concerns</b>	Drug side-effects (>50 %)
<b>Convenience and behaviors</b>	Convenience to take their medications (>50 %)  Inconvenience to take their medications included using insulin, carrying when going outside, taking before meal, taking at breakfast, crush tablets into the required strength, big-sized tablets, different doses and times.  Medication non-compliance problems were forgetting to take their medicines and reducing or stopping taking medications when feeling worse.

was probably caused by enalapril, her anti-hypertensive drug. As she thought she often got a cough and cold due to work stress, she had seen her physician at the same hospital a few times every month throughout the year. Unfortunately, no doctors or pharmacists could have identified the drug-related problem until she attended the MTM Clinic.

*Convenience and related behaviors about medication use.* Most (15 patients) stated that it was convenient enough to take their medications, as they took a few medicines or made use of pill boxes (or adherence aids) to remind their medication. However, some complained of inconvenience due to medicine dosage forms or timing. For instance, a diabetic patient affirmed that it was difficult to purchase insulin needles when traveling and it could frighten her colleagues when she injected insulin in her office. Other examples included:

“Taking meds after breakfast is not easy, as sometimes do not have food in the morning.” (P03)

“It was not convenient to carry an antacid mixture around or into a plane.” (P07)

“Very difficult to have meds before meal.” (P17)

“Inconvenient to crush tablets into the required strength.” (P24)

“Not easy to memorize all medications because of different doses and times. Need to use a mobile phone to help out.” (P20)

With respect to related behaviors of medication use, about 70 % of patients (17 patients) reported that they occasionally forgot to take their medicines. The most common reasons for the forgetting were the problems of inconvenience as the examples above. Additionally, they revealed they would quit taking medications when they felt worse or the symptoms were well controlled.

Table 2 summarizes the most common themes of each of medication experience domains.

## Discussion

The findings reflected on the views of rather older Thai patients who suffered from at least two chronic diseases, especially hypertension, and took 1 – 7 medicines; they were moderately educated and chiefly married. Their personal medication experiences were beneficial to the provision of patient-centered pharmaceutical care, which has not been the norm of clinical practice in Thailand or even the rest of the world. Bjorkmann and his colleagues [12] compared four pharmaceutical care (PC) models from the US and European countries and found that only Cipolle's model [6] is regarded as 'patient-centered'. Accordingly, this study partly followed this model and explored patients' medication experiences in various aspects.

Regarding the general attitudes towards medication therapy, most patients were personally not willing to take medicines, but needed to take them in order to relieve or control their symptoms. They also observed some examples of poorly-controlled patients who developed cardiovascular complications or followed the advice of physicians or pharmacists. This was consistent with the study of Viswanathan and colleagues [13] that reported the same reasons for taking medication in 20 African-American hypertensive patients. With some levels of internal motivation, they would immediately discontinue their medications if causing them any adverse effects. This corresponded to Conrad's study [14] that pointed out patients will take medication if they perceive more benefits than risks. Nevertheless, patients might continue using medicines, although having more risks than benefits, on account of trust in physicians and other healthcare practitioners. This was confirmed by Cipolle *et al.* [6] that indicated trust is one of the characteristics of therapeutic relationship that is crucial for pharmaceutical care.

One-third of this Thai sample also preferred to use complementary and alternative medicine (CAM), since they did not like to depend on the western medicines for the rest of their life or feared of drug side-effects. The implication for this was pharmaceutical care providers might help patients find an appropriate CAM, e.g., meditation, yoga, taichi or herbal products, to ameliorate their illnesses, thereby partly reducing their dependence on medications. However, the non-drug treatment should supplement rather than substitute prescribed medicines. For example, several studies that suggested practicing meditation can reduce blood pressure in both patients and healthy people [15-16]. Additionally, the use of CAM seemed to fit well with the concepts of patient-centered medicine and pharmaceutical care that partly focus on health promotion [2, 6].

In regard to the understanding of medication use, most patients did not know about their drug side-effects. The lack of the information on adverse effects was a matter of great concern that immensely impacted on patients' life and

work. Without proper understanding of side-effects, some patients were scared of their medicines and lost confidence in them. This information need contradicted the conception of some healthcare providers – patients should be provided with minimal or no information on medication side-effects; otherwise, they will not take it. Aside from that, half of them could not tell their medicine names, possibly due to being written in English. Cipolle and colleagues emphasized that "PC providers should write drug names in the way that patients understand" [6]. Since many Thai people cannot communicate in English, drug names should be typed in Thai, if feasible. Morrow *et al.* [17] pointed out providing patient-centered instructions for prescribed medications could increase patient's knowledge, understanding, and adherence in American patients with heart failure. They further suggested, for example, the name of digoxin should be written as "di-jog-sin" to make it more understandable. The issue of drug names written in Thai thus merits further study.

In this study, many hypertensive patients were not able to comprehend why they needed to take medications on a regular basis despite no more symptoms, including headache. Consequently, they tended to develop non-adherence behaviors either intentionally or accidentally, i.e., forgetting to take medicines quite often or suddenly stopping when feeling worse or well controlled. The result was aligned with other studies that found patients with chronic disease patients who need to take medications continuously are more likely to have the problems of medication non-adherence [18-20]. This in fact mirrored patients' limited understanding about the goals of medication use, which should practically be explained to all patients.

Similar to other studies [7, 14], this patient cohort expected their medications to help alleviate their symptoms or cure their diseases and was mostly concerned about medicine side-effects. Most of them did not feel uncomfortable for the medicine intake, as they were taking only few medicines with or without adherence aids. However, the higher number of medications and complicate dosage regimen can cause the inconvenience leading to medication non-adherence. This was supported by Lee and his team [21] that found patients' medication adherence can be enhanced by using blistered medication, which is a combination of all medicines together for each meal, along with regular counseling by pharmacists. Therefore, pharmaceutical care providers should be able to identify this inconvenience issue to prevent further compliance problems.

Limitations of the study and future research. The medication experiences of patients in this study, i.e., mainly hypertensive patients, might be different from those of other disease groups, which warrant more research. Since this was a cross-sectional study, the patients were not followed up for outcomes evaluation. Thus, future studies are also

required to assess the impacts of provision of patient-centered pharmaceutical care on health outcomes, including clinical, economic, and humanistic aspects.

## Conclusion

Patients' medication experiences in five domains are of paramount importance for patient-centered pharmaceutical care and should be explored during medication use. The findings of this study should be used for developing a patient-centered model or guidelines for pharmaceutical care provision. The medication experiences enable pharmaceutical care providers to identify drug-related problems clearly from the patients' points of view.

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