Prescribing Promotional Targeted Drugs: The Explanatory Phenomena (Part II: A Qualitative Study)
การสั่งจ่ายยาที่มีการมุ่งส่งเสริมการขาย: การอธิบายปรากฏการณ์ที่เกิดขึ้น (ตอนที่ 2 - การศึกษาวิจัยเชิงคุณภาพ)

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ABSTRACT

This was a qualitative study conducted after a drug utilization review (Part I) of the promotional targeted drugs (PTD), which included newer, more expensive drugs launched by the multinational drug companies with heavy promotional budgets. The objectives were to to explore Thai physicians' perception toward the PTD prescribing and factors that influenced them to prescribe a PTD by using qualitative methods: in-depth interviews and participatatory observation in promotional activities. Overall, the physicians had a positive perception toward the PTD. Nevertheless, most doctors were concerned about the cons of prescribing PTD related to the entangling relationship between doctors and pharmaceutical industry. Based on the grounded empirical data, explanatory models were established to explain the intricate multidimensional factors on prescribing PTD in Thailand. Thus, it can be useful for developing practical policies in order to promote rational drug use for a better public health nationwide.

บทคัดย่อ

เป็นการวิจัยเชิงคุณภาพหลังจากที่ได้ทราบข้อมูลเชิงปริมาณการใช้ยาที่ได้รับการมุ่งส่งเสริมการขาย(ตอนที่ 1) ซึ่งได้แก่ยาใหม่ที่มีราคาแพง, ได้รับการพัฒนาค้นคว้าวิจัยโดยบริษัทยาข้ามชาติและมีงบประมาณการส่งเสริมการขายที่สูง ทั้งนี้เพื่อทราบทัศนะของแพทย์ต่อยาที่ได้รับการมุ่งส่งเสริมการขายตลอดจนปัจจัยที่มีอิทธิพลต่อกระบวนการตัดสินใจสั่งจ่ายยานี้ในกลุ่มแพทย์ไทย โดยใช้การสัมภาษณ์เชิงลึกและการสังเกตุแบบมีส่วนร่วมในกิจกรรมการมุ่งส่งเสริมการขาย พบว่าแพทย์ส่วนใหญ่มีการรับรู้เชิงบวกที่ดีต่อตัวยาที่ได้รับการพัฒนาใหม่ แต่รู้สึกกังวลอย่างยิ่งในผลกระทบที่อาจเกี่ยวเนื่องเชิงธุรกิจจากการมุ่งส่งเสริมการตลาดต่อกระบวนการสั่งจ่ายยาของแพทย์ ผลการวิจัยนี้ได้นำไปสู่การพัฒนาแบบจำลองต่าง ๆ เพื่ออธิบายปัจจัยที่เกี่ยวโยงกันในหลายมิติสำหรับปรากฏการณ์การสั่งจ่ายยาที่ได้รับการมุ่งส่งเสริมการขายในประเทศไทย อีกทั้งเป็นประโยชน์ในการเสนอแนวปฏิบัติสำหรับจริยธรรมด้านการตลาดยา และนโยบายสาธารณสุขที่จะส่งเสริมให้มีการใช้ยาอย่างสมเหตุสมผล เพื่อสุขภาพที่ดีขึ้นของประชาชนไทยโดยส่วนรวม

Key Words : Physician prescribing, Drug promotion, Qualitative study
คำสำคัญ : การสั่งจ่ายยาของแพทย์ การมุ่งส่งเสริมการขายผลิตภัณฑ์ยา

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Background and Significance

Worldwide, the 1990's witnessed the introduction of many promotional targeted drugs (PTDs), which include those newer but more expensive drugs launched by the pharmaceutical industry with heavy promotional budgets aimed at prescribers. It is reported that billions of US dollars are spent on marketing activities to physicians each year (Findlay 2001). For methodological and ethical reasons, it is difficult to determine the the influence the drug industry has on physicians' prescribing behavior (Hemminki et al, 2004). Nevertheless, previous studies and reports on increasing budgets for drug promotion suggest that pharmaceutical promotional activities can effectively impact physician prescribing practices (Wazana 2000), (Chren & Landefeld, 1994). In fact, evidence is building that drug promotion can lead to increased drug expenditure, with the use of newer, more expensive and not necessarily more effective medicines (Lexchin, 2004), prescribing patterns that are not in accordance with the rational use of medicine principles (Kerr et al, 2003), or with cost-effective benefits to the patients (Cox et al, 2003). In fact, high drug costs can thus be a burden for the government as well as the Thai society as a whole if physicians, without an evidence-based rationale, prefer to prescribe branded or promoted drugs, rather than cheaper alternatives available in the hospital.

Although influences on drug-prescribing decisions have been intensively studied around the world throughout the past decades (Davis et al, 1995), knowledge about Thai physicians is hardly found in the public accessible literature (Chompootaweep et al, 1995). Interest and importance in the role of qualitative research within the evidence-based framework in healthcare setting are growing (Green & Britten, 1998), (Popay & Williams, 1998) due to its rich and in-depth information that are usually difficult to convey quantitatively as stated in Part I of this study (Layton et al, 2005). As the feeble relationships between the society, the medical practice and the pharmaceutical industry are evident due to the intense conflict of interests (Layton, 2005), it is essential for the public and healthcare policy makers in Thailand to understand the underlying issues and factors influencing the PTD prescribers. The objectives of this study were, thereby, to explore Thai physicians' perception toward promotional targeted drug (PTD) prescribing and the factors that influenced them to prescribe a PTD.

Protection of Human Subjects

According to ethical guidelines stated in the Helsinki's Declaration, the study was granted approval by the Institutional Review Board (IRB) committee at Khon Kaen University in June 2003.

Methods

During September 2003 - January 2005, we conducted in-depth interviews with physicians who were PTD presecribers at a teaching hospital. The approaches in Grounded Theory (Strauss & Corbin, 1990) were modified in order to obtain the theoretical sampling and saturation during the data collection and analysis. We also employed various data triangulation approaches including interviews with other key informants in the pharmaceutical industry, and participatory observation at different medical conferences.

Data Collection

Using a semistructured interview guideline, the first author (MRL) was the only interviewer who conducted face-to-face interviews with 18 physicians (14 males) aged between 32 - 55. The departments of the key informants included nine from orthopedics, six from medicine, two from pediatrics, and one from ENT specialty. As to their academic status, there were three professors, nine associate professors, three assistant professors and three lecturers. Prior to the interviews verbal contacts with the prospect doctors were made for interview appointment at their convenience. An informed consent was given to the interviewees for their signatures. The length of interview was scheduled approximately 30 - 45 minutes and, if allowed by the interviewees, interviews were audiotaped and transcribed. Referring to the Grounded Theory approach, data collection was an ongoing process with data analysis and continued until theoretical saturation - was achieved.

Data Analysis

The qualitative data including transcribed interviews, observational field notes, memos, and other forms of written or pictorial materials were collected. The data were independently analyzed by MRL and WS (the third co-author) through microscopic examination and interpretation of line-by-line analysis of the data, which the agreement rate for coding themes between the two reviewers was about 90%. Included in this analysis were some major aspects, firstly, the data which were the physicians' recounting of actual events and actions as they were remembered or texts, observations gathered by the interviewer; and secondly, the observers' and actors' interpretations of those events, happenings, or actions. In addition, the third element was the interplay that took place between the data and the researcher in both gathering and analyzing data. Such interplay was useful for the purpose of sensitizing the researchers to the properties and dimensions in the data. For ensuring that qualitative research was conducted in a rigorous manner, the study was conducted in an explicit and systematic way in relation to design, data collection, analysis, and interpretation. Moreover, the researchers aimed to reduce sources of error and bias by having more than one investigator took part in the data analysis and the independent reports of each can be analyzed for their consistency. Careful recording of the data throughout was also essential for enhancing rigor of this study as the concepts and themes were searched for and categorized in a systematic fashion.

Results

Perception of physicians toward PTD and prescribing of the PTD

From the perspective of Thai physicians, their perceptions toward PTD and prescribing of the PTD were similar, in general. However, there were some variations, which can be described as follows.

Characteristics of the PTD:

By the definition of the PTD, the physicians would identify the drug as new, expensive, or global blockbusters from the multinational companies and highly promoted brands in the drug groups such as the antilipidemia agents, COX-2 inhibitors, proton pump inhibitors, interferon, etc. depending on the physicians' practices. Although it was not normally used as a

first line drug of choice, the doctors viewed the key benefits of the PTD as ideal for patients' unmet needs and the new PTD were supposed to "work" better than the existing conventional drug. The features and benefits of the PTD that the physicians perceived in a positive way included high efficacy and quicker onset with seemingly less adverse effects than the conventional drug in the same category. In addition, some doctors preferred prescribing PTD because of the good features of the drug such as fewer dose administration required per day (OD or BID). Compared with the older drugs, PTD were more convenient to take so better patient compliance could be expected.

"When a generic does not work, I will switch to PTD."(MD2)

"Better efficacy and fewer adverse effects than the conventional medicine. It's quite good." (MD16)

"Not as the first line because it is expensive. Only when the existing drug/treatment does not work." (MD3)

"I will prescribe PTD when the patients have GI risks and cannot take traditional NSAIDs." (MD14)

"New drugs may help with the patients' compliance problem because the patients can take the medicine less time than with the conventional drugs. This can make the patients use the drug easier." (MD 17)

Expensive Price:

In reference to the price, all doctors in this cohort perceived that the PTD was expensive and should only be prescribed for patients with high social economic status who could afford the drugs. However, the majority of the doctors did not know exactly how much the PTD drug cost. But the respondents speculated that the high price was due to the costs of patent protection of the research and development of innovative drugs, the company's return on investment, and also the drug promotion activities. Consequently, the PTD had to be expensive in order to compensate for those costs associated with drug discovery and marketing.

"The patient has to pay about 100 baht per tablet, I think, but I am not sure. So, I will only tell the rich who can afford the drug about the options. Anyway, I know it is very expensive compared to the same drug in generic version, which is perhaps about 3 baht...The high price of branded drugs is due to the patent period. The company must make a lot of profit before the patent expires. Afterwards, they may lower the price but it will still be much more expensive than the generic." (MD5)

"I cannot remember how much the PTD costs...Perhaps new drugs would cost less if they did not spend so much on promotion. They can promote something else or get more profit." (MD 12)

"The price of the drug was set at a very high margin, I think around 50% or more. Very profitable mark-up in this kind of business." (MD 7)

Research-based Innovation:

Most doctors perceived that each PTD was important to the outcome of the efforts from the research-based drug discovery process.

"They need money to invest in R&D. Imagine if there were no PTD? We would only have Aspirin - the classic wonder drug as the only drug of choice for treating pain..." (MD 12)

"Somebody told me that it took millions of dollars to develop a new drug entity. And it took a long time, too." (MD 11)

Benefits from Prescribing PTD

The doctors perceived that the innovative PTD could benefit different parties in many ways, for instance, patients, doctors, drug companies, and hospitals. However, the doctors suggested that a win-win-win (doctor-industry-patient) approach should be applied not just win-win (doctor-industry) partners as it has been occurring at present.

"Many people benefit from PTD prescribing. Firstly, we make patient happy when the symptom is cured. The doctor is also happy that the treatment yields great success. The pitiful hardworking drug detailer will be even happier to achieve his/her target. And we also help increase income for the hospital." (MD17)

"It's a very hard situation - how to create a win-win-win situation: MD-Company-Patient. They usually forget the patient which is, in fact, the main domain!...." (MD8)

"Sometimes the efficacy may not be much different from the old drug, but the dose administration is good for drug compliance. If the patient can afford it or be reimbursed, then the patient can definitely benefit from the PTD." (MD8)

"The doctor's ability depends on deciding which drug to use for certain symptom. That's how we are judged, by our curing success rate. And the problem is that we don't have much time to see the patient, either" (MD7)

"Both drug and medical supply companies use promotion as their weapon to increase sales" (MD12)

"The current and the previous hospital management teams prefer a conservative policy i.e. they want to limit the number of drug items. I think differently. If the drug is good, hurry up! List it on the hospital formulary so the patients can benefit right away. At the same time, the hospital will increase its income by investing in the new drugs because these expensive drugs can be reimbursed or the patients can pay out-of-pocket anyway." (MD14)

Critical Issues on PTD Prescribing

Long-term Safety

A few doctors perceived the newness of PTD negatively in reference to the long term safety of using the PTD. Therefore, they did not consider prescribing as his/her drug of choice due to the limited amount of post-marketing surveillance data.

"PTD have higher potency and less adverse effects. But I don't like to start prescribing the PTD because of the scarce evidence on safety profile. Usually, I will feel more confident if the drug was launched on the market for 10 or more years. If less than that I am not sure." (MD 11)

"I don't like to start prescribing the PTD because...See what happened to Vioxx? Didn't they say the drug was safe a few years ago when it had just come out?" (MD6)

Cost

Since PTD are expensive, many respondents expressed concern about the escalating cost of PTD because either the patients themselves or the government had to bear the burden.

"Who pays for the cost? What about the number needed to treat (NNT) to save one life versus the cost of treatment? Is it appropriate for a country like Thailand? Tell me!" (MD5)

Symbiosis

The PTD's heavy promotional activities drew a lot of attention from doctors. Some practitioners viewed them as a compensation package for the doctors who have sacrificed for the

society. The abundant sponsorship could lead to physician's prescribing as a way of showing gratitude for the company's good help and support. Likewise, some viewed the relationship as an opportunity to help each other- a *"symbiosis"* interaction between the doctors and pharmaceutical industry. In such situations, each doctor had to make his/her own judgment based on his/her individual ethical value. Some would see it as just an educational support so the doctors could be updated. This has been perceived as legitimate since the government provides a very limited budget.

"I viewed the sponsorship from the drug company as a compensation for the doctors who sacrifice for society by working in a government hospital." (MD2)

"It is a relationship between the giver and receiver...A pig goes, a chicken comes, kind of thing."(MD7)

"Although there was no commitment on drug use, after the trip I felt I had to help them since the trip was quite expensive. That was a big investment in me for a trip overseas." (MD10)

"Attending conferences is important for doctors in order to be updated. The government support is not enough so we need some help from drug companies." (MD16)

"I heard you can request the drug company to support your conference overseas but I never experienced that myself. Anyway, I think it is a relationship between the drug company and the doctors that goes hand in hand with educational development programs since the government provides such limited resources." (MD17)

Ethical Balance:

Physician-Pharmaceutical Industry Relationship

The more senior physicians were worried about the questionable ethical relationship between doctors and the pharmaceutical industry that could lead to irrational drug use problems. The doctors commented that such phenomenon seemed like a tradition and it had become increasingly more prevalent around the world not just in Thailand.

"The relationship between doctor and industry needs to be limited i.e. work vs. social issues. There needs to be caution because it can have an impact on their prescribing decision. Its a deep-rooted cultural practice between physicians and drug companies all around the world." (MD12)

"The physician's decision on a new drug? It is not just purely for a scientific purpose. Rather, I believe it is the marketing relationship that influences the decision." (MD18)

Medical Council Regulations on the Relationship

Some doctors regarded that the relationship between physician-pharmaceutical industry as questionable and felt it could ruin the dignity of the profession as a whole. The issue was so critical that the Medical Council had to set some rules. However, the doctors criticized that these rules were not practical. It seems that the doctors were reluctant to listen. Therefore, the doctors recognized the need of each one - both doctors and pharmaceutical companies to lend some assistance to improve the situation by setting their own fine example.

"The hot issue among doctors nowadays is ethics in our practice - how we can govern ourselves more properly. We are talking more seriously about these issues because it has been getting worse and worse

during the past few years. We need to do something before someone else comes and regulates us." (MD9)

"From the time that I was a medical student, I have seen senior physicians.... who are also on the Medical Council Committee, favorably respond to the company's promotional activities. Now, they would like to issue some rules to regulate the doctor-industry relationship?..... I don't know..... In fact, The Medical Council's rules on receiving offers from drug companies does not work. They are too vague and they cannot trace any doctor's behavior, really....." (MD12)

"Everybody should know his/herself regarding the motivation and reasons behind doing such things. Doctors are in a very difficult situation right now. There have been so many issues related to greed that ruin our dignity and the reputation of our profession. You should be able to set a model for the medical students by practicing what you teach, not just by only saying it." (MD13)

PReMA's Regulations on Relationship

Some doctors had heard about the movement of the Pharmaceutical Research & Manufacturers Association (PReMA), which represents companies who are engaged in research and development, manufacturing, and trading or importing of pharmaceutical products in Thailand, in regards to the newly adopted ethical regulation on drug promotion. The doctors commended the commercially-based group for their initiative action. Nevertheless, it was anticipated to see the performance of PReMA whether it can fix the complex issues.

"PReMA... That's good news for doctors if there is a policy regulating the standard promotional practices for ALL companies." (MD12)

"PReMA may have good intention but time will tell whether it works or not." (MD13)

"Even the Medical Council cannot control physicians' behavior among us, who is PReMA? The key is that both parties i.e. the doctors and drug companies should have a good ethical conscience." (MD14)

"I wish that everybody - all professions had good ethical practices. If everybody is guided by good morals & ethics, nobody will be dangerous to one another. We can then work together with more peace." (MD8)

Factors involved in PTD prescribing

The multifactors involved in PTD use among physicians at a teaching hospital were intricate and sophisticated involving defensive medicine practice. Several parties were involved in the PTD prescribing process. In theory, the doctors revealed that factors that could affect them prescribing PTD included the new drug profile, the hospital and national essential drug policies, the patient's characteristics, and the evidence-based data support. However, in real practice, some other underlying factors included the marketing promotional activities, emotional rapports between physician-patient or physician-medical representative, defensive mechanisms, product availability, OPD loads, physicians' critical appraisal skills, and the PTD's competitors, all of which could have an impact on the physician's prescribing decision.

Symbiosis Balance Model

Based on the perception of medical professionals toward PTD prescribing and factors involved in prescribing PTD, a problem-solution

relationship could be drawn to reflect the way that doctors used when dealing with dilemma in order to survive or resolve the situation. The phenomenon could be identified as *"symbiosis"* when the key informants used the terms such as, *"help each other"*, *"you help me and I help you"*, *"give and take"*, *"A pig goes, a chicken comes - Moo Pai Kai Mar (in Thai)"* to explain what the relationship meant to them. Such phenomenon could be defined as the relationship between doctors and pharmaceutical industry that work in the same area of interest and depend on each other in certain ways, especially in favorable mutual benefits. The concept was grounded from the interview data and it was identified by the nature of phenomenon as Symbiosis Balance Model (Figure 1).

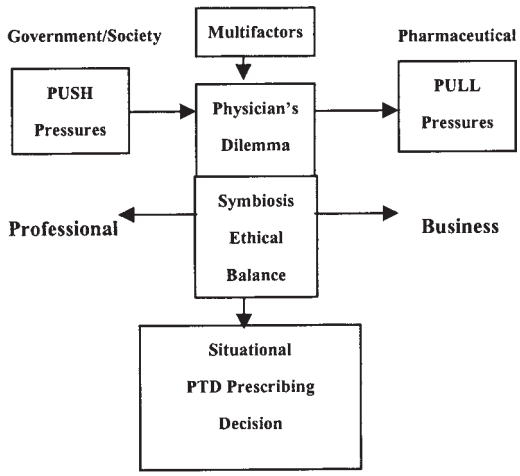

Figure 1 Symbiosis Ethical Balance Model

In brief, when the doctor faced the dilemma of the push and pull pressures together with other associated multifactors, he/she had to make decision based on his/her trained conscience and ethical balance between professional and business, which family background, peers, seniors, years of experience could induce the doctor to react to the challenges reflecting by different ways of prescribing depending on the situation.

Discussions

Perception toward PTD and PTD Prescribing

The features and benefits of the PTD can contribute to the underlying reasons for prescribing new drugs. However, the key findings in this study endorse a significant marketing impact on physician prescribing decisions as many researchers have confirmed (Wazana, 2000), (Chren & Landefeld, 1994), (Orlowski & Wateska, 1992). Interactions with medical representatives were also reported in a similar pattern to what other researches found to impact upon the prescribing practices of residents and physicians in terms of increased prescribing cost (Caudill, Johnson, Rich, & McKinney, 1996), irrational prescribing (Haayer, 1982), awareness, preference and rapid prescribing of new drugs (Peay & Peay, 1988), and decreased prescribing of generic drugs (Bower & Burkett, 1987). In most studies conducted among the western countries, the majority of doctors denied that they were likely influenced by promotional activities (Banks & Mainous, 1992), (Hodges, 1995), (Breen, 2004). Some researchers found that physicians were more likely to think that other doctors' prescribing was influenced by promotion, more than their own (Madhaven et al., 1997). Such phenomena were also observed among physicians in this cohort, nevertheless, some of the doctors admitted that the promotional activities did affect their prescribing decisions. Prosser and Walley emphasized the need for doctors to critically appraise the information supplied by medical representatives in relation to other information sources (Prosser & Walley,

2003). This was also mentioned by the key informants in our study.

Paradigm Model of PTD Prescribing Phenomena

By and large, the Paradigm Model of PTD Prescribing Phenomena displays an elaborate picture of the multifactors that may have an impact on the PTD prescribing behavior. The major components in the model are quite similar to the integrated models of different researchers' findings. For instance, Pitaknetinan and colleagues include regulatory and policy environment; hospital management practices and policies; and internal motivators of physician behavior as the influences in physicians' prescribing practice at public hospitals in Thailand (Pitaknetinan et al, 1999). Also, they speculate that pressure from pharmaceutical firms is a significant factor affecting physicians prescribing patterns. At our study site, the PTC's policy on drug selection for the hospital formulary was, generally, guided by the National Drug Policy. A restriction rule on PTD use was also implemented to filter the unnecessary use of expensive drugs. Our key informants also confirmed that since the promotional marketing activities could affect the doctors' prescribing pattern, either obviously or subtlely, the PTC's restriction mechanism could be a barrier for prescribing PTD. In addition, our study confirms other research (Layton et al, 2004) that the most common way that physicians receive information about a new drug product is from the commercial sources - pharmaceutical industry-dominated sources. But the most effective information that can urge them to prescribe the new drug usually comes from personal sources such as seniors or opinion leaders lecturing at symposiums. Usually, there is no single evaluation process used by all physicians or by one physician in all prescribing situations. However, some basic concepts may help to understand the evaluation process: first, the physician is trying to satisfy a need - which normally is the patient's problem from current drug use. Second, the physician is looking for certain benefits from the product solution to fit the unmet need. Third, the physician sees each product as a bundle of attributes with varying abilities of delivering the benefits sought to satisfy this need. Afterward, the physician arrives at their judgments or preferences toward the various products - PTD or other alternatives through attribute evaluation procedure and form preferences in the choicing set. The physician may also form an intention to prescribe the most preferred brand depending on their relationship with the medical representatives or the supporting drug companies.

Symbiosis Ethical Balance

The concept of symbiosis ethical balance is quite unique since none of the previous prescribing models (Raisch, 1990) has incorporated the concept of ethical and business balance in the full model before. It is critically important to understand in the insider's perspective or "*emic*" light, through qualitative approach that usually reflects the emergent influences associated with Thai physician's prescribing decision toward promotional targeted drugs, particularly at the teaching hospital where center of medical training is located. This is because people who are insiders to a setting being studied, physicians prescribing PTD in this case, often have a view of the setting and any findings about it quite different from that of the outsider researchers who are conducting the

study (Bartunek and Louis, 1996).

Unlike the well-established prescribing model that mostly drawn conclusion factors from the quantitative research approach, our models were developed based on the emic world views of prescribers, who were bombarded by the workloads and expectation from the society. The newly discovered models can permeate the push and pull pressures, in the physicians' perspectives facing the dilemma that may likely cause them to respond favorably with the pharmaceutical industry's attractive offers. The entangling issues with multi-dimensions that grounded from the empirical data were so sophisticated beyond the limitation of quantitative studies can convey. For the ethical balance mentioned among our cohorts, Phaosavasdi and his co-authors also expressed their deep concerns regarding the society's high expectation on medical profession that discouraged the innocent practitioners a great deal (Phaosavasdi, et al, 2005). Lack of financial support from his/her routine work can urge the doctor to receive privileges from the drug company as Ashar and friends conclude that physician dissatisfaction with income appears to partially explain why he/she participated in conducting pharmaceutical-sponsored clinical trials and lectures (Ashar et al, 2004). Moynihan also addressed in his article that the disentanglement of relationship between pharmaceutical industry and medical profession is surely necessary (Moynihan, 2003), which the balanced concept was also emphasized in our Symbiosis Ethical Balance Model.

Nevertheless, there are some limitations of this study that needed to be reminded. Since we conducted the research only at one site, the results may not represent for all Thai physicians. Moreover, for this kind of behavioral study, selection bias associated with the physicians who voluntarily chose to participate in the study as well as the bias from social desirability can hinder the physician to reveal about his or her true feeling in regards to reasons for prescribing promoted drugs. Due to the limited time and resources, the researcher focused on Thai physician's component only. Therefore, the patients' views were not assessed directly but rather it was reflected by the surrogate prescribers' perspectives.

Conclusion and Implication

Based on the grounded empirical data, we have uncovered the complex PTD prescribing phenomena by providing insights into how the physicians make sense of their PTD prescribing; their exposure to tactical promotion activities; and the situational defensive responses of physicians in their real practices, which are not easily reflected by the quantitative research approach (Part I). As there have been many new and expensive drugs launched on the market with heavy promotional budgets aimed at both prescribers as well as consumers to increase their sales, it is essential for the public and healthcare policy makers to understand the underlying issues and intricate factors influencing the PTD prescribing.

Responding to the research findings calls for action in establishing the healthcare business development network among the professional and regulatory agents, academic and research centers, pharmaceutical industry, the public health policy management, and health practitioners. Indeed, there are several domains that are important contributors to achieve the ultimate goal for public health

-*the healthy life for all.* In fact, it is not just for patient-centered but also every people of the entire nation including the healthcare practitioners to have a right to enjoy life. If all five pillars in the patient-centered for rational drug use development i.e. the academia; the pharmaceutical industry; the policy and regulatory agents; the health service centers; and the patient groups are strengthened, we will likely be able to improve the quality of drug use in Thailand more progressively. Many tasks can be achieved easier and many problems can be eventually resolved if we endeavor to work together as a team by sharing and maximizing the limited resources to the most benefit for all.

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