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The Factors Influencing Consumer's Learning about Indication of Anti-inflammation Drugs in Khon Kaen Province, Thailand

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Abstract

This study aims to examine type of media, information searching and perception of consumer influencing with consumer's learning about indication of anti-inflammation drugs in Thailand. The field survey was conducted by using a self-administered questionnaire. Data were collected from 400 samples aged between 15-65 years old who live in Khon Kaen province, the central city in the lower part of the northeastern region of Thailand and have experience on purchasing and/or using anti-inflammatory drugs by themselves in the past 3 months. The statistics used in the study consist of descriptive statistic (percentage, mean and standard deviation) and inferential statistics by using multiple linear regressions analysis. The results of this study show that three factors including type of media, information searching and consumer's perception about anti-inflammatory drugs have an influence on consumer's learning. The implications of this study are valuable for creating a new consumer's learning in offensive marketing strategies to achieve a correct understanding of using anti-inflammatory drugs in Thailand.

Keywords: Consumer's Learning, Anti-Inflammatory Drugs, Information search, Perception

1. Introduction

Consumer's learning is a human learning method which requires prior experience concerning behavioral reaction of individual (Schiffman & Kanuk, 2010). Consumer learning is one of the most significant indicators that marketing researchers has paid attention to because it does not only imply consumer's needs, but it also presents valuable implications for marketers to send messages to their consumers and achieve their marketing goals.

According to recent studies regarding consumer's learning methods in marketing, it has indicated that when consumers obtain a good learning method, it results in good attitudes and encourages purchasing behaviors in consumers. Thus, learning is considered one of the significant factors which influences consumer's decision making when marketers understand those factors thoroughly, they will be able to plan their marketing strategies concerning consumer learning (Iyengar, Ansari & Gupa, 2007).

Medicines are chemical substances taken into bodies in order to prevent and cure sickness, relieve pain, and help with diagnosis. Therefore, medicines play a crucial role in human lives. They, moreover, are one of basic needs that all humans cannot live without.

Despite a number of advantages medicines, they have certain side effects and unwanted consequences leading to fatality if abused (Daengploy, 2010). Hence, before taking medicines, consumers ought to have adequate understanding of drug indication in order to prevent side effects and unwanted consequences. According to the previous studies, Thai people tend to abuse medicines; they have improper beliefs towards taking medicines and unnecessarily consumer them (Panjam & Siriwong, 2012). Those behaviors are resulted from improper self-learning which leads to confusion and abusion of drug use. The most obvious examples of curing medicines which often lead to drug use's confusion and abusion are anti-inflammatory drugs and antibiotic drugs, both of which are commonly misunderstood as "anti-inflammatory drugs." A number of consumers perceived that these two types of drugs contain the same indications. These drugs as a matter of fact, have totally different indications. Improper self-learning in terms of medical uses and lack of knowledge and instructions are believed to account for the confusion and abusion.

According to the misunderstanding of anti-inflammatory drug indications, the author became interested in studying the factors which influence the learning of anti-inflammatory drugs' indication due to following reasons: 1) there is a limited information about medicines available, 2) medicines are human basic needs, 3) there is confusion among anti-inflammatory drugs which results in improper learning leading to fatal consequences, such as abusion, drug resistance, drugs overdose (Chaidilok & Janpasa, 2014). This study aims to explore the understanding of consumer's behaviors which influence anti-inflammatory drugs markets and purpose marketing implication to certain types of drugs for both manufacturer and marketers in the future.

2. Literature Review

This research involves following literature reviews and theories:

a. Consumer Learning Theory

Montree Yamkasikorn (2009) defined the meaning of learning as a permanent behavioral change resulted from practices and motivating factors, not from the nature.

Schiffman and Kanul (2010) stated that the theory of consumer learning is involved in the perception of certain places and is transformed into knowledge. Then, experience and knowledge will be in effect in the future.

Serirat (2007) defined that consumer learning is the learning process that individual consumer uses to attain knowledge and experience derived from purchasing products. The knowledge and experience will influence consumers' purchasing behaviors in the future.

b. Information Search Theory

Blackwell et al., (2006) stated that decision making on purchasing products is the decision making on choosing products or service in the first place. This process is divided into 5 stages and information search is a part of 3 stages.

Smithkrai (2013) stated that information search is the second step in decision making resulted from consumers' need. Consumer starts to search for information in order to understand the products before making decision. There are two types of information search.

According Jia and Hall (2013), information search affects learning new information concerning purchasing and service via smart phones.

c. Theories relating to marketing media

According to Kotler and Keller (2012), media (channel or medium) is a message vehicle or a carrier of messages from senders to recipients. Senders tend to use media to convey messages and information to recipients.

Shimp (2010) stated that marketers need to use media for sending messages in order to communicate with sellers and buyers fostering good attitudes and encouraging purchasing behaviors. Communication can be done in personal selling and non-personal selling.

According to Delbaere and Smith (2006), when information about the drugs is included in the advertisement, consumers tend to understand the information presented in the advertisement more easily than that presented by experts.

d. Consumer Perception's theory

Schiffman and Kanuk (2010) mentioned that perception is the interpretation of sensory information to represent and understand the meaning. For example, when we are conscious, our eyes are open, or when we hear a sound "Bang" from far away, we become aware of it. However, if we do not know the meaning of it or what that sound is made from, we will not reach perception. When someone tells us that the sound is the bombing of tires, we know the meaning of the sensation, so we call this process "perception".

According to Cunha and Laren (2008), it was found in the study of the prevention before consumer's learning the complex products by comparing two types of cheese found the assumption of prevent learning that the samples had a few chance to believe that some kind of products are difference when they got some information before decision.

Lyengar et al. (2007) found that perception of the wireless phone service frequently effects consumer's learning which make consumers satisfied with this service and also include retaining consumer lifetime value for longer and decreases turn rates.

3. Hypothesis

This study has hypotheses as follows;

Cunha Jr et al. (2008) found there are two factors that influence learning feature of cheese including 1) the media from the experiment shows that using different colors of tags or labels affects samples' learning feature of cheese and 2) the perception of samples' prior information that cheese made in Belgium is always the best cheese causes consumer's learning.

Zhao et al. (2013) stated that factors that influence consumer's learning to buy books via internet consist of 1) searching information from consumer's review by learning on other consumer's experience through internet and 2) the perception of online shopping via internet.

Tanthien (2009) indicated that there are two factors that influence consumer's drug use including 1) receiving information from experienced person; 2 out 3 of samples' learning drug use from instruction of professionals or the experts while the other sample' learning drug use derived from cousins, friends, or advertisement and 2) information received by the consumer's

perception through self-experience of drug use, the confidence in their pharmacy service and the behavior of consumer's using the same drugs which lead to this hypotheses as below;

H1: the media used for anti-inflammation drugs, search engine about anti-inflammation drugs instruction, and consumer's perception in anti-inflammation drugs instruction influence consumer's learning about anti-inflammation drugs indication.

4. Methodology

a. Research Population

This study was conducted by using questionnaires to collect data in Khon Kaen province which is one of the most commercial hubs located in northeastern region of Thailand. The total number of 400 samples is consumers who have experience on purchasing and using antibiotics by themselves more than one time within 3 months in Khon Kaen province, aged range between 15-65 years.

b. Sampling

In this study, randomly quota and purposive sampling were used. According to the total amount of Khon Kaen population, this survey targeted 3 groups: 1) the population living in Muang district of Khon Kaen which is the largest district with the largest number of citizens (157,764), representing 54.6% or 216 samples, 2) the population living in Nhong Rua district which is regarded as large-sized district with over 50,000 citizens, representing 115 samples out of total 83,854 citizens, and 3) the population living in Ban Fang district which is considered as a small-sized district with less than 50,000 citizens, representing 17.09% or 69 samples out of total 49,696 citizens.

c. Research Tools

In the study, questionnaires were used as a research tool to collect data from a total of 400 samples. The pilot study was also conducted to ensure the validity and reliability of questionnaire before collecting data.

- 1) The validity of questionnaire was approved by research adviser to examine questionnaire structure and content validity of both pre-test and post-test before finalizing the comprehensive questionnaire that covers the objectives of the study.
- 2) The 30 sets of edited pre-test questionnaire were distributed to ensure its reliability. The results were shown in Table 1.

Table 1 Reliability test of questionnaire

Variables	Reliability Rate (Alpha)
Part 2 Measuring the methods of seeking information of anti-inflammation drugs instruction of respondents	.706
Part 3 Measuring the level of acquiring information of anti-inflammation drugs instruction via media of respondents	.776
Part 4 Measuring the level of perceived information of anti-inflammation drugs instruction of respondents	.883
Part 5 Measuring the level of consumer’s learning of anti-inflammation drugs instruction	.933

Table 1 show that the alpha rated higher than the significance level at 0.7. Therefore, it can be concluded that this questionnaire is reliable.

d. Data analysis

The various statistical data was analyzed by using ‘SPSS for Windows’ including 1) descriptive statistics: %age, frequency, mean and standard deviation and 2) inferential statistics. The hypotheses were tested by using a multiple regression analysis.

5. Results

a. Personal information

A total of 400 respondents are male (48.75%) and female (51.25%). Most of respondents aged between 16-25 years, followed by 26-35 years, 36-45 years, 46-55 years and 56-65 years, representing 39.75 %, 28.25%, 17.25%, 9.5%, and 4.75% respectively. Most of educational earned degree of respondents is bachelor with 40 %, followed by high-school level with 23.00 %, higher than bachelor with 11.00 %, diploma level with 10.25 % and secondary level with 5.25 %, respectively.

b. Information of using anti-inflammation drugs in latest 3 months

Most of respondents have frequency of purchasing the medicine by themselves less than one time per month with 68.00%, followed by purchasing 1-2 times per month with 26.00%, purchasing 2-3 times per month with 5.00% and more than 4 times per month with 1.00%. The most of purchasing medicine by themselves is one type per times with 71.00%, followed by purchasing two types per time with 23.25%, purchasing three types per time with 4.75% and purchasing more than 3 types with 1%. Most of purposes of the anti-inflammation drugs use are for the analgesic with 72.25 %, followed by pain from exercise treatment with 71.25 %, antibacterial with 56.00 %, wound inflammation 52.00 %, and headache or toothache with 49.75 %.

c. Methods of respondents’ information searching for using anti-inflammation drugs

Overall information searching was rated at a moderate level with the average of 2.66. Considered each item, respondents gained information for using anti-inflammation at moderate

level by several methods including consulting with the medical staff until they understand (averaged at 3.39), reading label (averaged at 3.14), consulting with medical staff who are not doctor or pharmacist (averaged at 3.02) and consulting with friends (averaged at 2.81). However, searching information by several means was rated at a low level including internet (averaged at 2.33), self-testing (averaged at 2.03) and books or magazines (averaged at 1.91).

d. Media choices of respondents' receiving for using anti-inflammation drugs

Overall information receiving from media was rated at a low level with the average of 2.49. Considered each item, respondents gained information for using anti-inflammation drugs by different media choices at different levels. The respondents gained information for using anti-inflammation drugs from the advice of the doctors or pharmacists at a high level (averaged at 3.55) followed by advice of nurses or medical staffs (averaged at 3.18), instruction on label (averaged at 3.15) and advice of friend or family (averaged at 3.02) at a moderate level, and advertisement on internet (averaged at 2.40), advertisement on brochure (averaged at 2.30), advertisement on television program or radio (averaged at 2.00), advertisement on magazine (averaged at 1.84), advertisement on newspaper (averaged at 1.78) and advertisement on vehicles (averaged at 1.69) at a low level.

e. The respondents' perception of using anti-inflammation drugs

Overall perception of using anti-inflammation drugs was rated at a moderate level with the average of 2.83. Considered each item, respondents perceived how to used of anti-inflammation drugs (averaged at 3.70), indication of anti-inflammation drugs (averaged at 3.53), trade name of anti-inflammation drugs (averaged at 3.38) and side-effect of anti-inflammation drugs (averaged at 3.24) at moderate level.

f. The opinions on respondents' learning of anti-inflammation drugs

The overall respondents' learning level was at a moderate level with the average of 2.90. Considered each item, it was found that respondents' opinion on learning at a moderate level since they have had understanding of using anti-inflammation drugs for pain, swollen and inflammation in first choice (Mean 3.16). The respondents recognized the superior quality of anti-inflammation drugs for pain, swollen and redness treatment (Mean 3.06). The respondents would use anti-inflammation drugs for the next treatment on regular basis (Mean 3.03). The respondents recognized the name of anti-inflammation drugs (Mean 3.00). The respondents felt confidence to be treated by anti-inflammation drugs (Mean 2.98). The respondents could tell the differences of the features of familiar anti-inflammation drugs (Mean 2.95). The respondents could explain benefits and side-effects of using anti-inflammation drugs (Mean 2.94). The respondents would use anti-inflammation drugs for pain, swollen and inflammation treatment (Mean 2.94). The respondents could classify anti-inflammation drugs and other drugs (Mean 2.89). The respondents could recognize the features and prices of familiar anti-inflammation drugs (Mean 2.83). The respondents satisfied with the treatment with anti-inflammation drugs even there are replaceable drugs available (Mean 2.78). The respondents would always repurchase anti-inflammation drugs (Mean 2.74). The respondents became interested when new information of anti-inflammation drugs (Mean 2.69). The respondents could tell the reasonable price of each used anti-inflammation drug (Mean 2.68).

6. Hypothesis Test

Hypothesis 1: The type of media obtained in the use of anti-inflammation drugs, searching for information on the use of anti-inflammation drugs and perception of the use of anti-inflammation drugs influence learning of anti-inflammation drug indication of the consumers.

The analytic results are shown in the table 2.

Table 2: the result analysis of the factors influencing on learning the anti-inflammation drug indication of the consumers

Factors influencing on learning the anti-inflammation drug indication of the consumers	B	SE_B	β (Beta)	t	Sig
Constant (A)	.529	.108		4.905**	.000
1. Information searching for anti-inflammation drug use (X ₁)	.248	.053	.223	4.630	.000
2. Media obtained during anti-inflammation drug use (X ₂)	.211	.060	.168	3.505	.001
3. Levels of perception on the use of anti-inflammation drugs (X ₃)	.421	.032	.508	13.079	.000
R = .779 R² = .608 Adjusted R² = .605					
F = 204.332 SE = .53480 Durbin-Watson = 1.691 Sig. = .000					

** Statistic significance at the level of 0.01

The results of testing the factors influencing on learning the anti-inflammation drug indication of the consumers found that all three of factors: information search for anti-inflammation drug use, the media obtained during using the anti-inflammation drugs and the levels of perception on the anti-inflammation drug use have significant rate lower than 0.01. This indicates that information search for anti-inflammation drug use, the media obtained during using the anti-inflammation drugs and the levels of perception on the anti-inflammation drug use have an influence on learning of using the anti-inflammation drugs of the consumers. Considering the most influential factor on the learning of using the anti-inflammation of the consumers was: the levels of the perception on the use of anti-inflammation drugs which has the standardized regression coefficients at 0.508, followed by searching for information on the use of anti-inflammation drug of the respondents which has the standardized regression coefficients at 0.223 and the media obtained during anti-inflammation drug use with the standardized regression coefficient at 0.168.

This model has the rate of a coefficient of determination (R²) at 0.608. This means that all of three factors: information search for anti-inflammation drug use, the media obtained during using the anti-inflammation drugs and the levels of perception on the anti-inflammation drug use could explain the changes of learning on the use of anti-inflammation drugs of the consumers at 60.8 per cent. So, the regression equation obtained was as follows.

$$Y = 0.529 + 0.248X_1 + 0.211X_2 + 0.421X_3$$

So, learning on using of anti-inflammation drug of the consumers = $0.529 + 0.248$ (information search for anti-inflammation drug use) + 0.211 (the media obtained during using the anti-inflammation drugs) + 0.421 (the levels of perception on the anti-inflammation drug use)

7. Discussion

The factors influencing learning of the usage of anti-inflammation drug in the highest level included the perception of anti-inflammation drug usage, followed by the media received during using anti-inflammation drug and searching for information on the use of anti-inflammation drug. This is consistent with the findings of Cunha Jr et al. (2008) which found that the factors that influence in learning the features of cheese used with the samples were: the media obtained from the experiments and perception of the original data of the samples. Also, it is consistent with the findings of Zhao et al. (2013) which found that the factors influencing in learning of book purchasing via the internet system were: searching for the information related to the perspectives of those who experienced it before and perception to make purchases via the internet.

8. Recommendations and application of the research results

Recommendations and application of the research results for medical personnel

1. Based on the consumer's learning level found that this variable have highest influence to consumer's anti-inflammation drugs learning. The average of level in sub variable is moderate level, including have knowledge about 1) how to use anti-inflammation drugs 2) indication of anti-inflammation drugs 3) trade name of anti-inflammation drugs and 4) side effect of anti-inflammation drugs. From results show that consumers have not enough knowledge to be able to use drug safety so medical personal should focus to increase perception level about anti-inflammation drugs of consumers.
2. Based on the consumer's receiving media found that this variable have lowest influence to consumer's anti-inflammation drugs learning. Level of received media is low level but one variable in this group which has high level is the advice from doctor or pharmacist (average 3.55). From results show that the effective media which consumer access is doctor or pharmacist so should increase correct and enough information for build correct consumer's learning about anti-inflammation drugs.
3. Based on the consumer's searching information found that method to searching information of consumer average in moderate level, including 1) consult with medical staff 2) reading label 3) consult with medical staff but not doctor or pharmacist and 4) consult with friend. From results found that 3 in 4 search methods is searching information by consult person. When focus on type of media found that media which consumers received including 1) advice from doctor or pharmacist 2) advice from other medical staff except doctor or pharmacist and 3) information from label, the result according with top results that show all medical staff should be always ready to inform correct data to consumer.

4. From the test of factors influencing learning of anti-inflammation drug usage of the consumers, the most influential factors included the level of perception of anti-inflammation drug of the consumers, followed by the method of searching information and type of media received. These three factors have a positive influence on learning anti-inflammation drug. Therefore, medical staff should focus on three factors for increase consumer's learning more about anti-inflammation drugs.

Recommendations and application of the research results for the marketers

1. Based on the level of consumer's learning about anti-inflammation drug found that 1) attitudes and brand loyalty which consumers used in minimum level is people pleased use anti-inflammation drug. Although, there is any drugs can be replace. It shows that the consumers not pleased using anti-inflammation drug now and 2) brand value which consumers used in minimum level is there is nothing can change thinking of purchase anti-inflammation drugs which use regular basis. It shows that the consumers can change anti-inflammation drugs which use regular basis. From results, we can change consumer's learning by the advice from doctor or pharmacist. So, important strategy which can use is present product by doctor or pharmacist in first way.
2. Based on the level of consumer's perception in the aspect of knowledge of the side effects of the anti-inflammation drugs was in the moderate level. It was the lowest levels in all four factors in this experiment. The test of factor influencing the learning of the anti-inflammation drugs use showed that the consumer perception on the use of anti-inflammation drugs was the most influential in this test. This shows that if the marketers use a marketing strategy by encouraging the consumers by using the negative reinforcement on the side effects of other types of the anti-inflammation drugs and then present the merits of the anti-inflammation drug that they have been responsible for the marketing planning, this will result in having a chance of success more than using other factors.
3. Based on the searching and receiving information about anti-inflammation drugs found that 1) the consumer's way searching information, which used in low level including internet, test by myself and book or magazine and 2) the consumer's way receiving information, which used in low level including book or magazine, newspaper and advertisement on vehicle. From results show that consumers almost no learning about drugs from any print media, so should use marketing budget in other media to provide better results.
4. Based on the selection of the anti-inflammation drugs found that the consumers have been using the anti-inflammation drugs to treat infections (56%). In fact, anti-inflammation drugs cannot treat any infection of the consumers at all. So, the consumer's learning about anti-inflammation drugs still has an error. If the marketers take this weakness of the consumer to use, it may lead to the development of the new products that reduce inflammation and to treat infections of the consumers. It is good for the consumers to really cure the disease.

Recommendations and application of the research results for the government sectors

From the measurement of consumer's learning about anti-inflammation drugs, it was found that all the factors were in the moderate level. This suggests that consumer's learning about anti-inflammation drugs can be increased more when there is planning of the drug use through the factors that provide the positive results for learning of the consumers. Important three factors including the method for searching correct information, level of receiving media and correct perception about anti-inflammation drugs.

Recommendations for the future research

1. This study was a quantitative study which has the limitation in measuring the data from questionnaire respondents. There are a lot of data that should be used in research in order to get in-depth information and better clarity.
2. The research has only three influential factors including levels of perception about anti-inflammation drug, the media received the use of the drugs and method for searching information of the drug use. Therefore in the future research, other variables can be used for testing the influence on learning of the anti-inflammation drug use such as attitude towards the use of the anti-inflammation drugs.
3. This research related to learning which can be done in the forms of pretest and posttest learning.
4. The research was conducted on learning to use the anti-inflammation drugs only. In fact, doctors and pharmacists often prescribe the anti-inflammation drugs along with the antibiotics to treat the symptoms which some of consumers cannot identify between antibiotic and anti-inflammation drugs. The future research should study the use of anti-inflammation drugs in combination with the antibiotics.

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