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Factors Affecting Satisfaction of Patients of Physiotherapy Clinics in Bangkok

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Abstract— **The awareness of personal healthcare is getting higher nowadays. People deploy preventive practices in order to avoid sickness. While many diseases can be prevented by means of vaccination, there are also many that are difficult to run away from. Office syndrome is an example. This introduces the demand for remedy of office syndrome. Physiotherapy clinics come into play and many clinics are available throughout the country. The patients perceive and experience treatments differently and therefore they tend to be satisfied differently as well. This study aims to find out the influences between patients personal characteristics and their satisfactory level of physiotherapy clinics experiences based on service marketing mix (7Ps). The study intends to find the target patient groups and create relevant campaign to develop physiotherapy clinic business. Personal characteristics of the patients include gender, age, marital status, education, occupation, income, and frequency of visits. This study only focuses on the physiotherapy clinics located in Bangkok. Questionnaire was used as the tool to collect the data. The confidence level of 95 percent was set to achieve. The samples of 412 patients responded to the questionnaires. Statistical analyses were conducted to find the influences of personal characteristics and their satisfaction. The results show that the top three aspects of patients' satisfaction are price, people and service of the clinics. Frequency of visits affects patients' satisfaction most. In general, there is no statistical significance of the relationships of gender and occupation with satisfaction.**

Keywords— **Physiotherapy, Physical Therapy, Clinics, Satisfaction, Service Marketing Mix, 7Ps**

I. Introduction

The awareness of healthcare has increasingly become a consideration of people. A dream of sickness-free era has been long desired for. Due to the advancement of medical technology as well as the development of medical equipments and treatment techniques, many types of ailments can be cured these days easier than in the past. Furthermore, a better means to maintain fitness and health is to deploy preventive measures, such as getting vaccinations to prevent particular diseases, or to intake necessary vitamins and minerals that will keep you fit and healthy.

Unfortunately, the sickness-free days are yet to come. Despite how hard people try to be healthy, there are many that cannot be prevented and thus the curative practices become a solution. While many diseases can be cured by medicines, many others require special medical treatments or activities to heal their symptoms. Examples of these activities are, for instances, operation, acupuncture, and physiotherapy.

As the number of the elderly and the people in working-age increase, the count of physiotherapy clinics has been increasing as well. Such increase introduces a competitive environment among the clinics. All clinics need to strive to survive by not only to attract and expand their new patient bases, but the clinics also need to maintain existing patients. To prevent the patients from switching to attend other clinics, the patients must be satisfied.

Satisfaction can come in various facets. Many of aspects have been used as a framework for measuring satisfactory levels. One possible measurement may fall on the marketing mix concept. Since physiotherapy clinic is classed as a service sector, thus it is also possible to measure the level of satisfaction by the service marketing mix.

In addition, it is presumable that groups of patients may share similar preferences. In other words, it is assumed that any groups of patients may have similar likes and dislikes. These similarities may also influence the satisfactory level of the patients towards the physiotherapy clinics they attend.

Therefore, this study is interested if personal demographic characteristics of the patients of physiotherapy clinics may have any influences on their satisfaction level. This study sets its scope to cover only patients attending physiotherapy clinics in Bangkok. The objectives of this study are 1) to study factors which influence on the satisfaction of the patients of physiotherapy clinics in Bangkok, 2) to prioritize the level of satisfaction aspects, and 3) to study the influence of patients' characteristics and satisfaction aspects.

The null hypothesis is, H0: personal demographic characteristics do not influence on patients' satisfaction. The independent variables are personal demographic characteristics, include: gender, age, marital status, education, occupation, income, and frequency of visits. The dependent variables are the service marketing mix (7Ps), include: service, price, place, promotion, process, people, and physical evidence.

II. Literature Review

Physiotherapy, also known as Physical Therapy, is described by [7], [11], [19] as a life science which has its focus on the diagnosis, remediation, preservation and enhancement of the ability of the disabled and impairments for the functional ability of the patients. Therapy may include the use of physical agents such as assistive devices, trainings and exercises, as well as medical treatments. Physiotherapy is a profession performed by physiotherapists, also known as physical therapists [7].

According to [17], Thailand is ranked number three in ASEAN countries in terms of the largest number of physiotherapy services. Physiotherapy can only be performed by the trained and skilled practitioners with the license to practice physiotherapy [5]. There are 16 approved institutes in Thailand to offer courses in physiotherapy as announced in [17].

There were 74 registered physiotherapy clinics in Bangkok in 2011, Reference [5]. The number of the new clinics is growing and thus creating competitive environments among physiotherapy clinics.

As a result of the increasing in competitions, physiotherapy clinics need to induce new patients as well as to maintain the number of existing patients. To do so, [18] stated that patient satisfaction is the key to survive.

Satisfaction is a measurement of a gap between perception and expectation [13]. There are many frameworks introduced to measure the satisfaction of the service users. For example, many studies refer to the service aspects called SERVQUAL, a short form of Service Quality. Reference [2], [4], [9], [10], [15], and [21]. SERVQUAL introduces 5 satisfaction aspects: Reliability, Assurance, Tangibility, Empathy, and Responsibility. However, there are also many literatures against the use of SERVQUAL by indicating that the SERVQUAL framework alone is insufficient to perform the overall aspects as it only focuses on the process [12]. Rather, the satisfactory coverage should also include the results and environment factors [16], [18], and [20]. There are also other frameworks that were used to investigate the level of satisfaction in service industry. Reference [1], [6], [8], [14] The aspects used are similar to those denoted in the aforementioned frameworks.

When considering the satisfaction frameworks used, there are similarities to the service marketing mix model. The model consists of the consideration of 7Ps: Product (Service), Price, Place, Promotion, Process, People, and Physical Evidence [13]. These 7Ps cover the consideration of the process, results, as well as the environment [18].

The expectation of the patients is assumed to be influened by the characteristic groups of patients. This leads to the interest whether personal demographic characteristics of the patients influence their satisfaction according to the aspects described in the service marketing mix framework.

III. Research Methodology

This study utilized the questionnaire as a tool to collect primary data required for further analyses. The collected data include the patients' demographic characteristics and their opinions towards each aspect of the service marketing mix (7Ps).

A. Literature Review

Review of literatures is a secondary data collection that aims to help understand the relevant and similar studies. It also guides the boundary of the study and scope down the coverage of the data sets required for further analyses.

B. Population

The population in this study is set as the patients of the physiotherapy clinics in Bangkok. According to the information retrieved from the Ministry of Public Health, the number of registered physiotherapy clinic in Bangkok in 2011 was 74 clinics. Despite the knowledge of the number of clinics, however, the number of available patients, which is also the population for this study, remained unknown.

C. Questionnaire

The questionnaire was created based on the review of relevant literatures. After created, there were a few steps that need to be done before the application of the questionnaire.

1) Validity Check: The questionnaire was checked and approved for its validity of the contents by the experts assigned by the Thai-Nichi Institute of Technology (TNI). The experts would rank the Content Validity Index (CVI) and the questionnaire had to pass the CVI of 0.8 to be considered as an approved questionnaire. The questionnaire used in this study passed this test and thus approved for application.

2) Pilot Test: The approved questionnaire will be tested again for its reliability. The pilot test was done with 40 questionnaires for data collection. The collected questionnaire went through the reliability test using Cronbach's Alpha test. The acceptable questionnaire must have the reliability value exceeding 0.7. This questionnaire returns the result of 0.712.

The questionnaire is, therefore, ready for data collection.

D. Sample Size and Sampling

The samples were drawn from the population. The sampling process was done as convenient, non-probability sampling. The physiotherapy clinics which were willing to participate in the study and to support the data collection procedure were provided with the formal letter issued by Thai-Nichi Institute of Technology (TNI).

As the number of population size was unknown, the number of sampling required was calculated by the indefinite population equation (Reference [22]) defined as:

$$n = \frac{Z^2}{4E^2}$$

Where: n denotes the sample size required for achieving the confidence interval at the designated level, Z is the statistical value at the required confidence interval, and E is the acceptable error level from the research.

This study aims for the confidence interval of 95 percent. So, Z is equal to 1.96, and E is equal to 0.05. The calculation results in the required number of responses to be 385 questionnaires.

The questionnaires were distributed for data collection. The number of respondents was 412, which is over the minimum requirement of 385 respondents.

E. Analyses

The tool for the tests of hypotheses was SPSS version 20. Tests of hypotheses were done by using Crosstabs with Pearson's Chi-Square Tests for 5 independent variables, including: Gender, Marital Status, Education, Occupation, and Frequency of Visits. In addition, the Analyses of Variance's F-Test were performed on the independent variables: Age and Income.

IV. Findings

A. General Findings

The data of demographic characteristics of the respondents were collected and analysed. The results from analyses show the distributions of patients' demographic characteristics. Table 1 shows the results of the general findings.

TABLE I
PERSONAL DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS

Personal Factors	Description	%
Gender	Male	43.9
	Female	56.1
Total		100
Age	≤ 20 years old	9.2
	21 - 30 years old	12.1
	31 - 40 years old	21.4
	41 - 50 years old	33
	51 - 60 years old	19.7
	61 - 70 years old	4.1
	71 - 80 years old	0.5
	> 80 years old	0
Total		100
Marital Status	Single	33
	Married	64.8
	Divorced	1
	Widow	1.2
Total		100
Education	< Bachelor degree	10.4
	Bachelor degree	63.8
	Master degree	23.3
	Doctoral degree	2.4
Total		100
Occupation	Students	11.4
	Civil Servant / State Owned Enterprises	20.1
	Private Sector Employees	42.2
	Business Owners	12.9
	Freelance	3.2
	Homemakers	4.9
	Retired	4.9
	Others	0.5
Total		100
Income	≤ 5,000 Baht	6.8
	5,001 – 10,000 Baht	7.5
	10,001 – 20,000 Baht	5.1
	20,001 – 30,000 Baht	17.7
	30,001 – 40,000 Baht	20.9
	40,001 – 50,000 Baht	20.4
	50,001 – 70,000 Baht	12.6
	70,001 – 100,000 Baht	2.9
	> 100,000 Baht	2.2
	Missing	3.9
Total		100
Frequency of Visits	Over 8 times a month	8.5
	8 times a month (Approx. Twice a week)	0
	4 times a month (Approx. Once a week)	1
	Twice a month	40.8
	Once a month	41.5
	Below once a month	7.8
	Missing	0.5
Total		100

From Table I, it can be seen that the number of male patients is lower than the number of female patients. This is similar to many other studies in health-related topics. It may be assumed that female gender generally cares about the personal healthiness and wellbeing more than male gender.

Regarding the age group, it can be seen that the majority of the patients falls on the age group between 31 and 60 years old, accounting for approximately 75 percent.

The majority of the respondents work in a private sector, and followed by the group of civil servants or state owned enterprises. These groups account for approximately 60 percent of all respondents.

It is noticed that the top three income groups ranged between 20,001 and 50,000 Baht, accounting for 59 percent.

The largest parts, over 80 percent, of the respondents are the patients who come to physiotherapy clinics either once or twice a month, approximately 40 percent for each group.

B. Overall Satisfaction

Overall analysis according to the collected data shows that the top three aspects of the service marketing mix are price, people, and product (or service). These three aspects scored above 4.20 points out of 5, the maximum score, and thus classified as maximum satisfaction level. Table II shows the results of the overall satisfaction value for each aspect.

Note that the satisfaction value is interpretation as maximum satisfaction level for the score over 4.2, and as high satisfaction level for the score of 3.41 to 4.20. The results from this study only find that the satisfaction levels fall on these two ranges and nothing below 3.41.

TABLE II
OVERALL SATISFACTION FOR EACH 7PS ASPECT

7Ps factor	$\overline{X}$	S.D.	Interpretation
Price	4.3147	0.4318	Maximum Satisfaction
People	4.3039	0.2726	Maximum Satisfaction
Service (Product)	4.2660	0.2837	Maximum Satisfaction
Process	4.1990	0.3998	High Satisfaction
Physical Evidence	4.1248	0.3275	High Satisfaction
Place	4.0830	0.3874	High Satisfaction
Promotion	3.9041	0.6278	High Satisfaction

* significant when p-value < 0.05

C. Tests of Hypotheses

In this study, the tested sub-hypotheses were rejected when the p-value is below 0.05.

The results from the hypotheses tests show that, in general, gender and occupation do not influence the satisfactions of the patients. Table III shows the test results of the influences of each patient characteristic on satisfaction.

TABLE III
TESTS OF INFLUENCE OF PATIENT CHARACTERISTICS ON SATISFACTION

Independent Variable	Test	p-value	Result
Gender	Chi-Square	.571	No influence
Age	F-Test	.000	Influence
Marital Status	Chi-Square	.000	Influence
Education Level	Chi-Square	.005	Influence
Occupation	Chi-Square	.060	No influence
Income	F-Test	.000	Influence
Frequency of Visits	Chi-Square	.000	Influence

* significant when p-value < 0.05

When recheck the sub-hypotheses of gender and occupation, the results also confirm that they have no influence on the satisfaction level of the patients in any 7Ps service marketing mix aspects.

For the characteristics which influence on patient satisfaction, further analyses were performed to see how the group of the patients are satisfied.

TABLE IV
TEST RESULTS OF INFLUENCES OF AGE ON PATIENTS' SATISFACTION

Factor	F-test	p-value	Result
Service	3.178	0.005	Influence
Price	2.711	0.014	Influence
Place	2.15	0.047	Influence
Promotion	4.791	0	Influence
Process	0.461	0.837	No Influence
People	1.505	0.175	No Influence
Physical Evidence	2.643	0.016	Influence

* significant when p-value < 0.05

Firstly, the influence of age groups on each of the 7Ps aspect was examined. The results show that age groups of the patients influence on the satisfaction in the aspects of service, price, place, promotion and physical evidence.

Figure 1 shows that, the service satisfaction level of the patients tends to be higher as the patients get older, starting from the age of 30 years old. The peak of the satisfaction is at the age of 50 to 59 years old. Then, the satisfactory level of service aspect tends to be dropping. The least satisfied age group is the patients aged between 21 and 29 years old. This trend is true for all aspects of interests, as can be seen in the following figures.

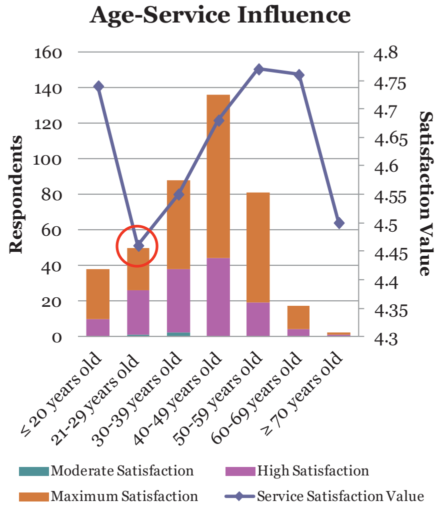

Fig. 1 Influence of Age on Service of the Physiotherapy Clinics

Figure 2 illustrates that the satisfaction level on price increases as the age increases. The most unsatisfied age group is, as described earlier, the age group between 21-29 years old. The assumption of dissatisfaction is that this age group is the new earners and therefore the level of income is still a hindrance for attending physiotherapy clinics. The price satisfactory value levelled off between the age of 30 and 59.

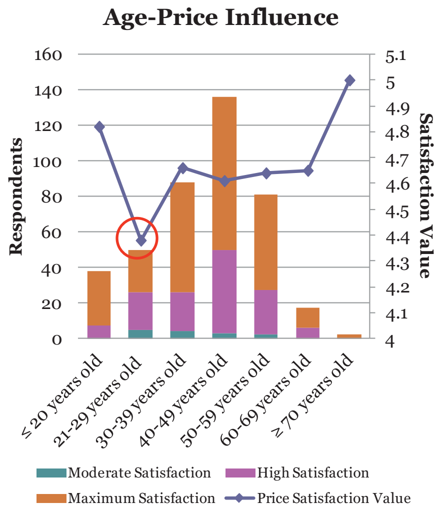

Fig. 2 Influence of Age on Price of the Physiotherapy Clinics

Figure 3 presents the same result for the age group 21-29 years old on the influence of age on place satisfaction value. For the patients aged from 30, the satisfaction level gets on a plateau until the age of 60, before it starts to drop for the patients aged 60 and above. Therefore, for elder patients, the place and accessibilities should be the aspect of concern.

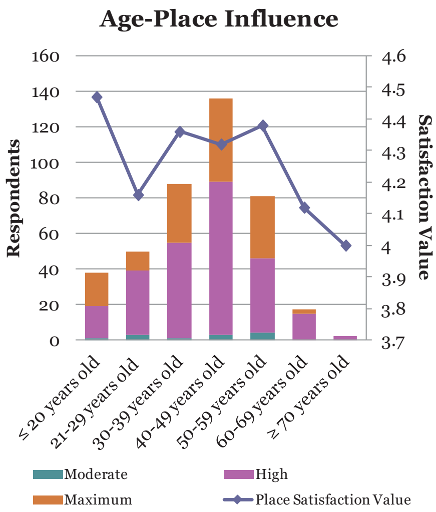

Fig. 3 Influence of Age on Place of the Physiotherapy Clinics

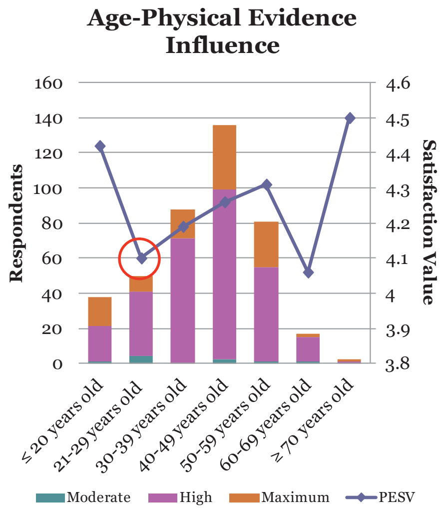

Fig. 5 Influence of Age on Physical Evidence

Figure 4 reveals the influence of age group on promotion satisfaction. The satisfaction is found to increase slightly as the age increases. However, the satisfaction value levelled off at relatively lower than other aspects. Therefore, promotion is generally insufficient for physiotherapy clinics.

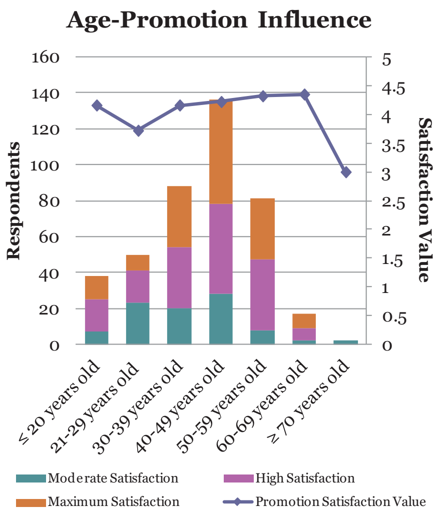

Fig. 4 Influence of Age on Promotion of the Physiotherapy Clinics

Figure 5 shows the influence of age group on physical evidence. Similar to the service, the patient satisfaction keeps increasing from the age 30 until 59, before lowering from the age of 60.

The result of next characteristic, marital status is shown in Figure 6. It is found that there are significant differences among groups of different marital status on satisfaction. The marital status can influence on the aspect of the service and promotion at the p-value of 0.000 and 0.004 respectively. However, there were too few respondents from the divorced and the widowed group. Therefore, it is not analysable for the meaningful results.

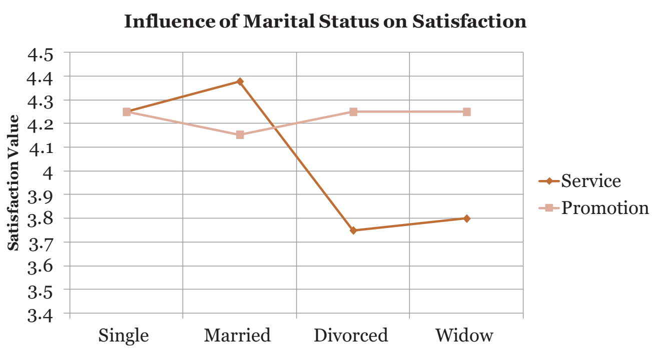

Fig. 6 Influence of Marital Status on Satisfaction

Figure 7 presents the influence of the education level of the patients on the satisfaction. The result shows that it gives similar result as those of the marital status. For the Education of the patients, the result shows that education level influence on the service (p-value is 0.001) and promotion (p-value is 0.045). The threshold of satisfaction tends to get higher as the patients are educated more. Therefore, the satisfaction level of higher education is decreasing as the education level increases.

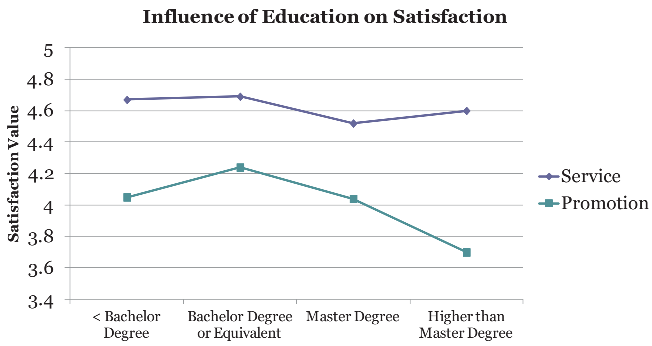

Fig. 7 Influence of Education on Satisfaction

Regarding the Income and Satisfaction, it is found that income influences on the satisfaction of service, price, promotion, people, and physical evidence. Table 5 shows the hypotheses test results.

To consider the satisfaction value for each of the aspects, Figure 8 shows the level of satisfaction for each income group compared to each of the 7Ps aspect of the dependent variables.

TABLE V
TEST RESULTS OF INFLUENCES OF INCOME ON PATIENTS' SATISFACTION

Factor	F-test	p-value	Result
Service	2.535	0.011	Influence
Price	2.935	0.003	Influence
Place	1.162	0.321	No Influence
Promotion	2.351	0.018	Influence
Process	0.751	0.646	No Influence
People	2.694	0.007	Influence
Physical Evidence	3.300	0.001	Influence

* significant when p-value < 0.05

It is found that the most dissatisfied group is the patients with the income of 10,000-20,000 Baht. The satisfaction level rises as the income level increases. The increasing trend goes on until the income reaches the value of 40,000 or 50,000 Baht, where the mean satisfaction value tends to go down. Again, it also shows that the promotion aspect is the least satisfied of all aspects.

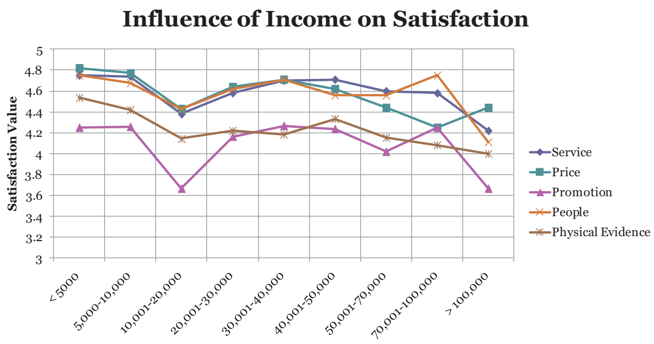

Fig. 8 Influence of Income on Satisfaction

Finally, it was found that the most impacting and influencing factor on the patients satisfaction is the frequency of visits. Figure 8 illustrates influences of frequency of visits on 6 aspects of the service marketing mix, including: Service, Price, Place, Promotion, Process, and People.

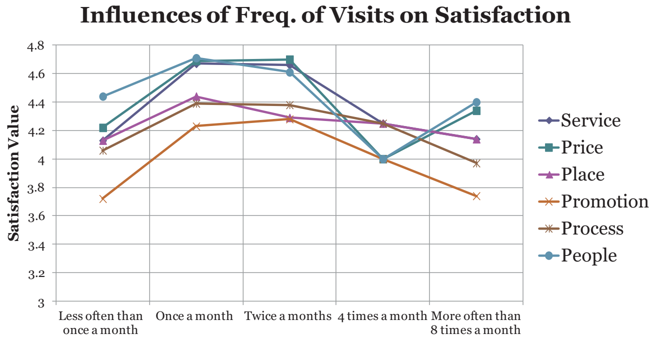

Fig. 9 Influence of Frequency of Visits on Satisfaction

TABLE VI
TEST RESULTS OF INFLUENCE OF FREQUENCY OF VISITS ON PATIENTS SATISFACTION

Gender	Chi Square	p-value	Result
Service	30.561	0.000	Influence
Price	42.68	0.000	Influence
Place	22.55	0.004	Influence
Promotion	33.897	0.000	Influence
Process	27.023	0.001	Influence
People	120.682	0.000	Influence
Physical Evidence	15.187	0.056	No Influence

* significant when p-value < 0.05

Further analyses for each of the factors show that the optimum frequency of visit to gain the maximum satisfaction level, according to the data collected in this study, is likely to be once and twice a month. It is also found that as the frequency of visits increases, the level of satisfaction is reducing. This is understandable if the process is tedious. For example, the patient's satisfaction will be reduced if the patients have to do many redundancies for every time they have to do all the paper works again. In addition, some of the chronic sickness may need some times before it starts to see or the differences. Therefore, some patients who have no patience and who visiting more often but still see not much progress can be feeling disturbed as well.

V. RECOMMENDATIONS

The summary of the influences of patient groups on their satisfaction can be seen from the results. Related recommendations in satisfaction and business improvement of physiotherapy clinics are as follows.

A. Age Groups of Interests

From the study, the least satisfied group is between 21 and 30 years old. Therefore, some improvement maybe possible if special offerings are provided to this particular age group.

It is also noticeable of the all-time satisfied group. This group is the patients aged below 20 years old. This group is a young generation with relatively low threshold of satisfaction. It is possible to apply a patient attraction campaign such as friend-to-friend introduction to attract more patients.

As the age of the patients increases, the level of satisfaction increases for the service, promotion, and physical evidence as

well. This fact is applicable to the age from 30 years old until the age of 69 years old. Therefore, it is possible to apply a loyalty program to attract long-term and regular patients. The program includes, for example, membership application or treatment packages.

The satisfaction of place starts to drop when the patients reach the age of 60 years old. Visiting the place can start to become a hindrance when the patients have to come and visit the clinics on their own, especially if the clinic is not convenient to access or far away from their homes. A possible solution might include offers of accessibilities, such as, pickup and drop off services, branch transfers, or home treatment program.

B. Income groups of Interests

The patients with low income can be offered with some special deals. The patients with lower income than 50,000 Baht tends to have higher satisfaction. As the patients have the income of 50,000 Baht, they have the highest satisfaction. Once the patient has the income over 50,000 Baht, the satisfaction level tends to decrease. It is assumed that the worthiness in the eyes of the patients varies. To attract the patients, a promotion program with membership and treatment packages are recommended.

C. Frequency of Visits of Interests

The frequency of visits can influence the satisfaction level on many 7Ps aspects. The optimum frequency of visits is once to twice per month.

On the service aspect, it is recommended to have regular physiotherapists scheduling. This is because many patients prefer to receive the treatments from the physiotherapists of their choice. In addition, additional service offers such as home exercises and home treatments can be offered to increase the conveniences of the patients and, as a result, a higher satisfaction level. As the physiotherapists are the main contact people between the patients and the clinics, the physiotherapists also act as a brand ambassador who reflects the professionalism of the clinics as well. Therefore, the physiotherapists need to be trained regularly on the technical topics. Also, personality and interpersonal and social skills of the physiotherapists also need to be trained as well.

Regarding the place, it is recommended to have sufficient parking for the patients. Many clinics still have some difficulties of the parking spaces. Ironically, the patients of physiotherapy clinics usually have difficulties of getting on and off the vehicles already. If the clinics cannot provide good accessibility, the patients may be dissatisfied easily.

Besides physical accessibility, intangible accessibility also needs to be considered. This type of accessibility includes, for example, access to information via information technology channels, online scheduling, or flexible operating hours are recommended if possible. This helps attract patients who are inconvenient to visit clinics at regular operating hours.

D. Others

Promotion is generally ranked the worst in all dependent variables. Some promotional activities such as brochures distributions, online marketing, information sessions, CSR activities, or other similar promotional campaigns should be arranged.

Some suggestions from the patients should also be considered. Examples include the coverage of several physiotherapy branches, sufficiency of supplementary equipments such as X-Ray equipment. It is recommended that the waiting time should not exceed 15 minutes. If the clinics can have an agreement with the insurance company to directly subsidize treatment costs for patients with insurance policy. It would save the patients a lot of hassle to have to pay at each visit and collect the receipts for later reimbursements.

During waiting, Wi-Fi accessibility should be provided. Finally, cleanliness and friendliness of staff are important to make the clinic trustworthy and good impression on the clinic.

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