IDENTIFYING ELEVEN FACTORS OF SERVICE MARKETING MIX (4PS) EFFECTIVE ON TENDENCY OF PATIENTS TOWARD PRIVATE HOSPITAL

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ABSTRACT

Introduction: One of the important factors of correct management is to identify the reasons for patient tendency toward private hospitals. This study measures these factors based on service marketing mixes. **Patients and methods:** This study used a cross sectional descriptive methodology. The study was conducted during 6 months in 2015. The studied population included patients of private hospitals in Tehran. Random sampling was used ($n = 200$). Data was collected by an author-made questionnaire for service marketing factors. Reliability and validity of the questionnaire were confirmed. Data analysis was done using factor analysis test in SPSS 20. **Results:** The results showed that constant attendance of physicians and nurses has the highest effect (0.707%) on patient tendency toward private hospitals.

Key words: Private hospital, reasons of tendency, patients, marketing mix.

1. INTRODUCTION

Medical and health organizations as well as health care providers face considerable pressure resulting from costs, quality, and good clinical service delivery in public health system. These organizations are increasingly concerned with marketing as a managerial role which provides attractive opportunities to deal with these problems (1).

Marketing is a highly complicated discussion in service sector (including health organizations) which is different from manufacturing sector. However, marketing success allows us to think and act systematically in relation to medical health care and related services. Moreover, it allows us to express our ideas on medical health services (2). Attraction of patient satisfaction encourages them to perform their medical instructions properly and timely, and facilitates treatment and recovery. On the other hand, organizations which consider customer satisfaction as a priority will succeed in the competition market (3).

2. SERVICE MARKETING MIX

Considering the fact that service industry is increasingly growing in societies, the more complicated, specialized, and competitive business and social activities are associated with higher growth of service sector. Inevitably, managers need to know service marketing principles for better

management in current active and competitive world, and use marketing techniques to provide services and meet customer needs (4).

Service marketing mix includes all variables which can be controlled by the organization in relation to target market to meet market demand. Button and McManus classified service marketing variables in seven strategic factors (7Ps) including product (service), price, place (with distribution), promotion, physical evidence (signs such as building, uniforms, etc.), people (employees and customers) and process (procedure, etc.) (5). Moreover, marketing mix is a different concept in service sector. Nature of service, which involves aspects such as customer participation in production and significance of time factor, requires other critical factors. In order to overcome this challenge, eight decision-making variables (8Ps) including product or service, place and time of delivery, process, productivity and quality, people, promotion, physical evidence, and price are used in integrated service management model (6).

It is essential to consider marketing factors and customer attraction in hospitals and service providing organizations due to the following reasons: a) customer satisfaction, b) delivery of services which have been proven good over time, c) general awareness: like other organizations, success rate of hospitals depends on participation and increased awareness

of potential users, d) identification of vulnerable segments of the society: vulnerable segments need special care, e) behavioral aspect, f) cost-effectiveness: hospital management allows cost-effectiveness by proper management of materials, warehouses, human resources, etc., g) a logical payment structure: social marketing principles necessitate that poorer segments of the society also use scientific advancements (7).

3. HEALTH CARE SYSTEM IN IRAN

In Iran, both private and public sectors are responsible for providing various medical and health services; however, the contribution of public sectors, particularly Ministry of Health and Medical Education, is higher. In Iran, over 70.9% of medical institutes are affiliated to universities of medical sciences, while 18.8% of health care institutions belong to the private sector (8). Currently, all solutions and mechanisms of performance improvement in industrial and service sectors have focused on customer interests and demands. Customer satisfaction has been considered as a factor of growth, profitability, and development as well as organizational transformation. The subject of this study is a large organization (health care system), its customers (patients) and product (health), which is directly associated with the most important human need, i.e. healthy life (9).

Considering the fact that health care services provided by public hospitals are cheaper than private hospitals due to the implementation of Iranian Health System Reform Plan, the question is why patients tend to use private hospitals. Given this presumption, the purpose of this study is to identify the factors effective on tendency of patients toward private hospitals. Although identification of strengths and opportunities is other outcome of the current study, it denotes another aspect of necessity and importance of this study which plays a significant role in adopting plans and strategies by the hospitals to achieve their goals.

4. LITERATURE REVIEW

Through a survey, the author states that the number of hospitals with marketing departments has increased by 75% over the last three years, which is partly due to the increasing competitive pressures (10). Lux (11) considered private practitioner, recommendations of family and friends, treatment quality and hospital accessibility as the most important factors in choosing a hospital. According to Yaghoobi, it is essential to consider marketing principles, especially marketing mix in service delivery (12). Sanayei states that consumer behavior assessment plays a significant role in marketing, because consumer marketing requires proper understanding on consumer needs and demands (13). Kotler notes that modern marketers focus on customer rather than product and services, and believe in a stable, constant relationship with the customer, because they attempt to attain high level of satisfaction and create value for the customer (14).

5. MATERIALS AND METHODS

This study used an applied descriptive methodology through a cross-sectional survey during 6 months in 2015. The studied population included patients hospitalized in private hospitals (Bahman, Atiyeh, Dey, and Pars) Tehran. The samples (200) were selected by allocation proportional

to the number of patients hospitalized in each hospital. Data was collected by an author-made questionnaire consisting of two parts. First part included personal information of patients (gender, age, education, residency, income level, occupation, insurance, and hospital referral). Second part included 15 questions regarding four service marketing mix (4Ps) factors (people, physical evidence, process and productivity and quality) on a Likert scale. Validity of the questionnaire was confirmed by experts. Reliability of the questionnaire was estimated at 0.855. Collected data was analyzed using descriptive and inferential statistics including factor analysis test in SPSS 20.

6. RESULTS

Out of 200 patients referred to private hospitals, 53.5% were female and 46.5% were male. The patients were younger than 20 (9.5%), 20 – 29 (24%), 30 – 39 (29%), 40 – 49 (3%), and older than 50 (34.5%). The patients had less than high school diploma (15%), high school diploma (22%), associate degree (13.5%), bachelor's degree (35%), and master's degree and higher (14.5%). In terms of occupational status, the patients were 27.5% unemployed, 54.5% employed, and 18% retired. Income level of patients ranged from less than 1 million Tomans (14.5%), 1-1.5 million Tomans (16.5%), 1.5-2 million Tomans (38.5%), to more than 2 million Tomans (30.5%). The patients lived in a city (96.5%) or a village (3.5%). The patients had different insurances including Armed

Personal information		%
Gender	Female	53.5
	Male	46.5
Age	Younger than 20	9.5
	20 – 29	24
	30 – 39	29
	40 – 49	3
	Older than 50	34.5
Education	Lower than high school diploma	15
	High school diploma	22
	Associate degree	13.5
	Bachelor's degree	35
	Master degree and higher	14.5
Occupational status	Unemployed	27.5
	Employed	54.5
	Retired	18
Income	Less than 1 million Tomans	14.5
	1-1.5 million Tomans	16.5
	1-2 million Tomans	38.5
	More than 2 million Tomans	30.5
Residency	City	96.5
	Village	3.5
Insurance	No insurance	20.5
	Armed Forces Insurance	5
	Iranian Health Insurance	17
	Social Security Insurance	26.5
	Other insurances	31
Referral	Private practice	53
	Emergency room	26.5
	Clinic	4
	Other	16.5

Table 1. Distribution of demographic variables for patients of private hospitals

Forces Insurance (5%), Iranian Health Insurance (17%), Social Security Insurance (26.5%), and other insurances (31%); 20.5% had no insurance. The patients were referred to the hospitals by a private practitioner (53%), emergency room (26.5%), clinic (4%), and others (16.5%) (Table 1).

The parametric Kolmogorov-Smirnov (K-S) test was used to determine normal distribution of variables. The results indicate a significant difference between the factors effective on patient tendency to private hospitals based on marketing mix factors and normal distribution; thus, the distribution is non-normal. $K-S = 3.670$ at $sig = 0.000$, indicating non-normal distribution of data. Thus, factor analysis was used to identify the factors effective on patient tendency toward private hospitals. Prior to factor analysis test, KMO test (Bartlett test) was used to ensure sampling adequacy (whether data can be used for factor analysis).

In this study, $KMO = 0.855$, indicating good correlations between data for analysis. Moreover, chi-square was calculated to ensure data fit for factor analysis based on matrix of correlations; the calculated chi-square = 2.159, indicating that factor analysis basis is not equal to zero in this population and the observed matrix of correlations belongs to a population with independent variables (Table 2).

Deal	Statistical Indicators	
0.855	KMO Index	
2.159	Chi-squared	Bartlett
528	df	
0.000	sig	

Table 2. KMO and Bartlett test

For primary extraction of data, it is essential to determine the method and the criterion for extraction of a number of factors. Table 3 gives shows primary subscription and extracted subscription. First column indicates subscriptions prior to factor extraction; thus, they all show the number 1. Second column indicates subscriptions after factor extraction; larger values show better extracted factor of variables. In the second column, values <0.5 are excluded; obviously, no factor is excluded here (Table 3).

Extracted	Primary subscription	Factors
.680	1.000	Politeness and respectful and appropriate behavior of personnel
.656	1.000	Constant attendance of doctors and nurses
.664	1.000	Appearance and convenient cover staff
.555	1.000	Advanced medical equipment
.567	1.000	Proper hoteling services (food, room, bed, etc.)
.570	1.000	Discipline and speed of operation
.541	1.000	Careful service delivery
.517	1.000	Short waiting times
.559	1.000	performing duties by the doctors (efficiency)
.573	1.000	proper and right actions of personnel (effectiveness)
.550	1.000	quality of service provided by the doctors and nurses

Table 3. Primary subscription and extracted factors for variables included in factor analysis

There are some problems in primary factor extraction. For example, it is not clear which variables belong to which

class of factors. Moreover, many variables are loaded on multiple factors, and some factors are almost the factor for all variables. To this end, factor rotation is required to determine whether a variable falls under a factor, and finally to interpret and understand it. Factor rotation means rotation of factor axes around origin of coordinate to obtain factors which are theoretically simpler and more significant. Non-rotated factors are extracted in terms of their significance. Through factor rotation, values of variance between the first factor and subsequent factors are redistributed. Although total variance explained by the factors is kept constant for the non-rotated matrix and the rotated matrix, the variance explained by the factors separately changes due to the redistribution of variance between factors.

In order to interpret factors, it is essential to determine the factor loadings to be considered as significant values. There are various criteria to make this decision. The most common criterion lacks mathematical basis and it is mostly based on an experimental rule proposed by statisticians who frequently use factor analysis. According to this criterion, the factor loadings $> \pm 0.3$ are considered significant, the factor loadings $> \pm 0.4$ are highly significant and the factor loadings $> \pm 0.5$ are very significant. Thus, the higher factor loading is associated with higher significance in interpreting factor matrix. This criterion is more common than other criteria; however, it provides better results when the sample size is above 50. As shown in Table 4, factor loadings of all variables are > 0.5 and thus very significant (Table 4).

Index	factor loading
Constant attendance of doctors and nurses	.707
Discipline and speed of operation	.702
proper and right actions of personnel (effectiveness)	.679
performing duties by the doctors (efficiency)	.672
politeness and respectful and appropriate behavior of personnel	.671
Careful service delivery	.668
quality of service provided by the doctors and nurses	.665
advanced medical equipment	.659
proper hoteling services (food, room, bed, etc.)	.658
short waiting times	.621
Appearance and convenient cover staff	.614

Table 4. Final structure loadings

7. DISCUSSION

According to the findings, constant attendance of physicians and nurses, discipline and speed of operation, and proper and right actions of personnel have highest effects on patient tendency toward private hospitals. This is consistent with Lux (11) who examined the effect of specialized medical centers in choosing hospitals by patients. Lux (11) considered private practitioner, recommendations of family and friends, treatment quality and hospital accessibility as the most important factors in choosing a hospital. Miller et al (15) conducted a qualitative study to determine the factors effective on hospital selection by patients. They used focus groups to collect data, which is inconsistent with the current work. They also addressed patient preferences in 13 factors, among which single-bed rooms, appropriate environment and good food are similar to the current work. Findings

of the current study are consistent with Baldwin (16) who evaluated the factors effective on patient preference in hospital selection (short waiting time, good food and respect for patient). In the study of Roah et al. (17), diversity and quality of services were factors of hospital selection, which is consistent with the current work. Moreover, Yaghoobi (12) concluded that personnel (doctors and paramedics) of private hospitals are the most important factors in hospital selection by the patient, which is consistent with the current work.

8. CONCLUSION

Considering the findings obtained for private hospitals, it can be concluded that ten factors with the highest effect on patient tendency toward private hospitals include politeness and respectful and appropriate behavior of personnel, constant attendance of doctors and nurses (people); advanced medical equipment and proper hoteling services (physical evidence); discipline and speed of operation, careful service delivery and short waiting times (process); performing duties by the doctors (efficiency); proper and right actions of personnel (effectiveness); and quality of services provided by doctors and nurses (productivity and quality). Since these factors are considered as strengths of private hospitals, hospital management needs to maintain these strengths in order to retain customers and their loyalty to survive in the competition and acquire highest level of customer satisfaction.

Although age, residency, education, income and insurance were also effective, the patients were most referred to private hospitals by their private practitioner, which led to their satisfaction. Customer needs has changed in new health system; thus, hospitals are required to use more effective methods to meet these needs. The modern marketing system is concerned with customer needs; marketing mix can be effective in attracting customers. Private hospitals need to consider both service delivery and productivity which is fulfilled by patient-centeredness by meeting customer needs and attaining their satisfaction, leading to patient loyalty. Hence, hospital management is required to consider marketing factors to attain customer satisfaction, loyalty and values. Therefore, service marketing mix can be helpful in healthcare systems in both private and public hospitals.

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