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Effect of marketing mix (7 Ps) on patients' tendency to University and social security hospitals in Mazandaran

Samereh Yaghubian[1], Ghahraman Mahmoudi*[2] and Mohammadali Jahani Tiji[3]

[1]*PhD Scholar Health Services Management, Sari Branch, Islamic Azad University, Sari, Iran*
[2]*Assistant Professor, Department of Health Services Management, Sari Branch, Islamic Azad University, Sari, Iran*
[3]*Assistant Professor, Department of General Education, School of Medicine, Babol University of Medical Sciences, Babol, Iran*

ABSTRACT

The low quality of services and failure to address patients' needs cause dissatisfaction and failed relations with patients. In this respect, this study was conducted to examine the role of the marketing mix (7 Ps) in patients' tendency to university and social security hospitals in Mazandaran. This applied study with a cross-sectional analytical design was performed in selected social security and university hospitals in Mazandaran, Iran in 2015. A total of 600 inpatients and outpatients were selected through stratified random sampling. The data were collected using a standard questionnaire with interval confidence of 0.85. The regression test and SPSS15 software was used to analyze the data. Maximum mean score, which belonged to the services variable, in outpatient ward and inpatient ward was respectively 31.18 ± 8.66 and 36.31 ± 9.36 in university hospitals and 27.78 ± 4.99 and 37.18 ± 9.35 in social security hospitals. The personnel factor (P <0.0001) in the outpatient ward and services (P < 0.0001) and process (P = 0.03) factors in the inpatient ward of university hospitals mostly affected the patients' tendency. None of the variables affected the patients' tendency in the outpatient ward of social security hospitals, but promotion (P = 0.003) and service (P = 0.038) factors in inpatient ward of those hospitals had the highest impact on patients' tendency. Considering that the personnel, productions, promotion and process factors were determined as the most efficient marketing mix elements in patient's tendency, senior managers of hospitals and health policymakers are recommended to take into account the marketing mix elements in their planning for promoting the quality of services, patients' satisfaction, and continuity of the hospital-patient relation.

KEY WORDS: MARKETING, PATIENTS, HOSPITALS, INPATIENTS

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INTRODUCTION

A service is a kind of organizational activity that maintains or improves people's performance or health. People actually buy time, knowledge, expertise, and resources when they buy services from providers (Sreenivas et al 2013). Service providers compete with one another in providing health services (Nasiripour et al 2010). Furthermore, methods for provision of hospital care, as an essential need, are inefficient in the healthcare system (Nasiripour et al 2012). However, hospitals provide a range of treatment services to patients (Horwitz & Nichols, 2011). The treatment services encounter market's mechanism of supply and demand, which results in the development of marketing policies with scientific, productive, and service approaches for attracting patients (customers) (Anagre, 2012, Parmar & Pandya, 2015).

Studies show that service organizations that have accepted marketing principles and based their programs on the elements of marketing mix have reached positive results (Alreck & Settle, 1999). The reason is that marketing strategies are necessary for organization and provision of services to patients and evaluation of hospital performance and patients' satisfaction (Ahmad et al 2013). Leiderman et al stated that more investment on marketing would promote the hospital's infrastructure (Leiderman et al 2010). In fact, marketing contributes to proper provision of services to appropriate people at the proper time and is considered a process of change in search toward true customers (Parmar & Pandya, 2015).

The reason is that patients are involved in choosing hospitals and decide which hospital to choose more than ever (Yaghoubi et al 2011). Moreover, patients' expectations of the quality of care have been increasingly tied to conceptual and practical models for evaluation of hospital performance (Ahmad et al., 2013). Therefore, hospital managers make use of the marketing mix as a practical framework for making decisions and combining services in order to adjust to customers' needs and demands (Lin, 2011). These workers have introduced the variables of marketing mix (7 Ps) as the production of goods (services), place, price, physical evidence, promotion, personnel, and processes (Ahmad et al., 2013; Lin, 2011; Parmar & Pandya, 2015). Given that the customers' satisfaction is central to marketing decisions (Parmar & Pandya, 2015), focus on the above variables leads to the development of an appropriate situation in customers' mind (Hasangholipour et al 2014). York also points out that patients' satisfaction and fulfillment of their needs are essential principles of marketing, and this has been growingly accepted in the healthcare system (York & McCarthy, 2011).

Furthermore, healthcare and medical organizations and those involved in the healthcare system face with the high pressure of costs, quality, and proper delivery of clinical services (Lega, 2006) think of marketing as a solution for optimum use of financial resources in hospitals and medical centers and also return of the investment and income (Jabbari et al 2013). Spending higher costs or using more services is not associated with more favorable clinical outcomes, better technical care or physicians' ability to provide higher quality care (Mittler et al 2010).

Therefore, service marketing mix involves all variables that an organization can control and provide in order to fulfill market's demands and the target market (Ahmad et al., 2013; Parmar & Pandya, 2015), increase financial resources of hospitals, change the attitude of service providers, and reduce the communicational distance between the providers and consumers (Sreenivas et al., 2013). Regarding consumers' high rate of dissatisfaction with healthcare services, poor communication, and low quality services and low productivity, it is necessary to study patients' tendency in and determine the most influential factors for choosing a hospital. Therefore, this study was conducted to examine the effect of marketing mix (7 Ps) on patients' tendency to selected university and social security hospitals in 2015 in Mazandaran, Iran in order to identify and fulfill healthcare service recipients' desires and needs.

MATERIAL AND METHODS

This study with a cross-sectional analytical design was performed in 2015. The study population included inpatients and outpatients of a university hospital (Fatemeh Zahra) and a social security hospital (Valiasr) in Mazandaran, Iran. Upon coordination with authorities of the Social Security Organization and Mazandaran University of Medical Sciences and obtaining permission for performing the study, the researchers went to the hospitals and explained the objective of the study to all participants. They were assured that the participation in the study was voluntarily, and that their information would remain confidential and be used only for answering the research questions. The participants were also assured that they could withdraw from the study whenever they desired. The participants included 600 people who were selected from outpatients and inpatients, 300 patients from each hospital, using stratified random sampling. The data were collected using a standard questionnaire (Abedini et al 2014) with interval confidence of 0.85 and two parts: the first part involved demographic specifications of the patients (sex, age, educational level, and marital status), and the second part included 45 questions about the 7 elements of marketing mix (price, place, promotion, personnel, physical evidence, process,

and product or service), which were scored within Likert scale (from very low to very high). The data were analyzed in SPSS15 software and were compared using descriptive statistics, including percent value and mean, and analytical statistics, including *t* test. The backward logistic regression model was used to examine the concurrent effect of variables on patients' tendency, and R2 was used to determine goodness of fit.

RESULTS

There were 284 women (47.3%) and 316 men (52.7%) in this study, and 225 patients (37.5%) were older than 50 years. The educational level of most participants, 221 people (36.8%), was under high school diploma, and 481 patients (80.1%) were married. Table 1 provides other demographic specifications.

The results showed that mean score of "Production" variable in the outpatient ward of the university hospital was higher than that of the social security hospital ($P < 0.0001$). Mean score of "price" variable in the inpatient ward ($P = 0.10$) and outpatient ward ($P < 0.0001$) of the university hospital was higher than that of the social security hospital. Moreover, mean score of "place" variable in the inpatient ward ($P < 0.0001$) and outpatient ward ($P < 0.0001$) of the university hospital was higher than that of the social security hospital. Mean score of "promotion" variable in the outpatient ward of the university hospital was higher than that of the social security hospital ($P < 0.0001$), but no significant difference was found between these two hospitals in inpatient ward ($P = 0.173$).

Mean score of "personnel" variable in the outpatient ward of the university hospital was higher than that of the social security hospital ($P < 0.0001$), but no significant difference was found between these two hospitals in inpatient ward ($P = 0.814$). Mean score of "physical evidence" variable in the outpatient ward of the university hospital was also higher than that of the social security hospital ($P < 0.0001$), but there was no significant difference between these two hospitals in inpatient ward ($P = 0.141$). Eventually, there was no significant difference between these two hospitals in inpatient ward ($P = 0.927$) and outpatient ward ($P = 0.29$) in terms of "process" variable (Table 2).

The backward logistic regression analysis was used to examine concurrent effect of the studied variables on patients' tendency in outpatient and inpatient ward of each hospital. The concurrent effect of services, price, place, promotion, people, physical evidence, and process variables was examined in each model. The results showed that people in outpatient ward of the university hospital significantly correlated with patients' tendency ($P < 0.0001$). Other variables did not significantly correlate with tendency. The goodness of fit of the model was $R2 = 0.23$. Moreover, the process ($P = 0.038$) and Productions ($P < 0.0001$) variables in inpatient ward of the university hospital significantly correlated with patients' tendency, but other variables did not correlate with tendency. The goodness of fit of the model was $R2 = 0.287$. Although Productions variable in outpatient ward of the social security hospital closely correlated with patients' tendency, the correlation was not significant. The goodness of fit of the

Table 1: Distribution of demographic specifications of patients in the university and the social security hospital in Mazandaran, 2015.

Demographic variables		University hospital		Social security hospital	
		Number	Percentage	Number	Percentage
Sex	Female	141	47%	143	52.3%
	Male	159	53%	157	47.7%
Age	<30	22	7.3%	78	26%
	31-40	45	15%	73	24.3%
	41-50	81	27%	76	25.3%
	>50	152	50.7%	73	24.3%
Educational level	Below high school diploma	110	36.7%	111	37%
	High school diploma	92	30.7%	93	31%
	Associate diploma	39	13%	37	12.3%
	Bachelor's	43	14.3%	37	12.3%
	Master's	11	3.7%	12	4%
	PhD	5	1.7	10	3.3
Marital status	Single	31	10.3	88	29.3
	Married	269	89.7	212	70.7

Table 2: Comparison of the university hospital and the social security hospital in Mazandaran, 2015 in terms of values of the studied variables.

Variable		University (Fatemeh Zahra) Mean ± Standard deviation	Social security (Valiasr) Mean ± Standard deviation	P-value
Production	Inpatient	36.63±9.36	37.18±9.35	0.614
	Outpatient	31.18±8.66	27.78±4.99	0.000
Price	Inpatient	17.87±4.84	16.26±3.7	0.000
	Outpatient	15.2±4.34	11.56±3.34	0.000
Place	Inpatient	17.98±5.2	16.08±3.77	0.000
	Outpatient	15.41±4.34	12.58±2.81	0.000
Promotion	Inpatient	28.08±6.52	27.1±5.88	0.173
	Outpatient	28.75±8.63	21.08±3.14	0.000
Personnel	Inpatient	23.78±6.03	23.6±7.18	0.814
	Outpatient	20.63±5.4	17.99±3.25	0.000
Physical evidence	Inpatient	16.27±4.56	17.07±4.81	0.141
	Outpatient	15.35±3.74	12.3±3.04	0.000
Process	Inpatient	17.83±5.79	17.7±5.53	0.927
	Outpatient	15±3.78	15.53±4.75	0.29

model was R2 = 0.072. Eventually, the Productions (P = 0.038) and promotion (P = 0.003) variables in inpatient ward of the social security hospital significantly correlated with patients' tendency, but other variables did not significantly correlate with tendency. The goodness of fit of the model was R2 = 0.333. Table 3 provides influential variables along with their OR and confidence interval.

DISCUSSION

The results showed that 'personnel' were the most influential factor in outpatients' tendency to the university hospital and significantly correlated with patients' tendency to that hospital, and other variables did not significantly influence patients' tendency. However, the significance level the variables decreased in the follow-

Table 3: Results of the final logistic regression analysis using backward model about the effect of studied variables on patients' tendency in the university hospital and the social security hospital in Mazandaran, winter 2015.

Hospital/ ward	Variable	Coefficient of variation (B)	Standard Error (SE)	Odds ratio (OR)	Significance level (P)	Goodness of fit (R2)
University/ outpatient	Constant coefficient	-4.33	1.05	----	0.000	0.23
	Personnel	0.179	0.046	1.19(1.09-1.3)	0.000	
University/ inpatient	Constant coefficient	-6.19	1.049	---	0.000	0.287
	Process	0.09	0.044	1.095(1.005-1.19)	0.038	
	Productions	0.107	0.03	1.12(1.049-1.18)	0.000	
Social security/ outpatient	Constant coefficient	-4.79	1.85	---	0.01	0.072
	Productions	0.112	0.62	1.18(0.99-1.26)	0.071*	
Social security/ inpatient	Constant coefficient	-6.89	1.54	---	0.000	0.333
	Productions	0.069	0.033	1.07(1.004-1.14)	0.038	
	Promotion	0.145	0.48	1.15(1.05-1.27)	0.003	

*Insignificant

ing order: personnel, process, price, promotion, place, productions, and physical evidence. Ahmad et al s study showed a significant correlation between personnel and patients' level of satisfaction (Ahmed et al 2014). However, results of Zare et al's study on personnel's contribution to the productions market showed that the personnel were the third influential factor among elements of marketing mix in attraction of a certain patient to a hospital (Zare et al 2013). According to the results of this study, it seems that the reason outpatients chose a university hospital was because of medical technical features, mainly the presence of various specialists in outpatient clinics in morning and evening shifts. Patients' tendency to such hospitals was actually because they had one specialty and did not have many choices for patients.

However, the results about inpatient ward of the university hospital showed that Productions and process variables were the most influential factors in patients' tendency to that hospital and significantly correlated with patients' tendency to that hospital, but other variables did not significantly influence inpatients' tendency. Furthermore, the significance level of the variables decreased in the following order: Productions, process, price, personnel, promotion, physical evidence, and place.

In this regard, Sreenivas's study found productions as the most important element, among the seven elements of marketing mix, in hospital marketing, and other factors gained relative scores (Sreenivas et al., 2013). Regarding the results of this study, it can be argued that the process in the medical services marketing mix emphasizes familiarity with ease and clarity of methods used to provide Productions to customers. It seems that patients in university hospital are aware of details and procedures of how services are provided. Furthermore, there are educated personnel, necessary consultations, instruction manuals, and appropriate signs for directing and guiding patients. In this respect, patients cooperate with the hospital without stress and would be satisfied. Regarding services, it should be noted that the quality beyond patients' expectation is one of the factors influencing type of services, and fulfillment of patients' expectations normally contributes to patients' choice of the hospital again and satisfaction with the services. It seems that the university hospital could highly fulfill patients' expectations through provision of various services.

The results of outpatient ward of the social security hospital showed that none of the elements of marketing mix significantly affected patients' tendency. The significance level of the variables decreased in the following order: Productions, physical evidence, promotion, price, place, process, and personnel. However, studies performed by Yaghubi (Yaghoubi et al., 2011), Abedini (Abedini et al., 2014), Abedi (Abedi, Rahmani, Abedini, & Rostami, 2014), Sreenivas (Sreenivas et al., 2013), and Ahmad (Ahmad et al., 2013) confirmed the influence of one or more elements in this regard. The lack of influence of the elements in outpatient ward of Valiasr hospital might reveal that the patients might not have answered the questionnaire appropriately, and thus, the study could not show the main cause of outpatients' tendency well.

The results of inpatient ward of the social security hospital showed that the Productions and promotion were the most influential elements in patients' tendency and significantly correlated with patients' tendency. In this regard, price was the least influential element, and the order of elements regarding the significance level of the test was as follows: promotion, Productions, process, physical evidence, personnel, place, and price.

Jabbari et al.'s study showed that more attention to medical promotion and provision of more facilities can improve hospitals' status in the area of medical tourism according to the elements of marketing mix (Jabbari et al., 2013). Furthermore, promotion and quality of services are among the 6 main marketing strategies for health programs managed in the United States (Angela, 1993).Gopinath showed that promotion, especially electronic promotion, was influential in attraction of patients in Indonesia (Gopinath, 2015). Ahmad et al.'s study also found that two factors, Productions and promotion, of the five factors influencing patients' satisfaction significantly correlated with patients' satisfaction and were the first and the second influential factors (Ahmad et al., 2013). However, Zelena's study revealed that failure to attend to promotion for medical services could be attributed to observing ethical codes (Zelená, 2014), so they did not agree with promotion for medical services.

RECOMMENDATIONS

Given that the people, Productions, promotion, and process were determined as the most influential marketing mix elements in patient's tendency, senior managers of hospitals are recommended to take into account marketing in their plans in order to promote the quality of Productions and increase their achievements from the market through establishing stable relations besides fulfilling patients' needs and satisfying them.

LIMITATIONS

The limitations of this study include the following: some authorities and personnel of the hospitals failed to cooperate with this study, patients did not have adequate information about hospital marketing, and some patients did not cooperate well.

CONCLUSION

According to the results, the major cause of patients' tendency to each admission ward of both hospitals is its appropriate Productions, and senior managers of the hospitals have emphasized the efficiency and productivity besides improving the quality of Productions and thus have satisfied the patients to the extent that the patients accept to pay more money and even travel long distances from other cities in order to receive high quality Productions regardless of the price or place of services.

The social security hospital could show the effect of promotion besides appropriate Productions on attraction of inpatients through making advantage of appropriate promotion for starting up multiple specialized centers and wards and the presence of experienced physicians. However, modification of methods and specialized processes, training managers of different levels, and ease of treatment in inpatient ward of the university hospital have made the process element more influential than other elements besides appropriate Productions. Moreover, the presence of famous experienced physicians who suitably communicate with patients with the help of competent nurses depicts the effectiveness of personnel in outpatient ward of the university hospital.

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REFERENCES

Abedi, G., Rahmani, Z., Abedini, E., & Rostami, F. (2014). Surveying the impact of services marketing mix components (7p) on patient's disposition toward the public and private hospitals of Sari city. Hospital, 13(4), 63-71.

Abedini, E., Abedi, G., Barzegari, H., Foladi, S., & Ganjali, A. (2014). The role of mixed marketing elements (7Ps) in patients' tendency to the public and private hospitals from the perspective of patients and nurses. AFINIDAD, 80(565), 47-53.

Ahmad, A. E. M. K., Al-Qarni, A. A., Alsharqi, O. Z., Qalai, D. A., & Kadi, N. (2013). The Impact of Marketing Mix Strategy on Hospitals Performance Measured by Patient Satisfaction: An Empirical Investigation on Jeddah Private Sector Hospital Senior Managers Perspective. International Journal of Marketing Studies, 5(6), 210-227.

Ahmed, R., Parmar, V., Ahmad, N., U., W. A., & Khoso, I. (2014). The Communication Mix in Pharmaceutical Marketing. The Pharma Innovation Journal, 4(5), 46-53.

Alreck, P. L., & Settle, R. B. (1999). Strategies for building consumer brand preference. Journal of Product & Brand Management, 8(2), 130-144. doi: doi:10.1108/10610429910266986

Anagre, B. (2012). Modifying the marketing mix of library services in accordance with the market mechanism (An applied study at Jordanian universities). International Journal of Academic Research in Business & Social, 2(10), 218-231.

Angela, S. C. (1993). Managed care, marketing and patient enrollment: The case of the Toronto hospital comprehensive health organization. University of Toronto Canada.

Gopinath, R. (2015). A review on consumer behaviour and perceptiontoward marketing of computer hardwares.

Hasangholipour, T., Mostaghimi, M. R., & Mohammadi Ahranjani, N. (2014). Investigating the Effect of Marketing Mix and Corporate Image on Brand Equity of Talia and Rightel Companies. International Business and Management, 9(2), 41-52.

Horwitz, J. R., & Nichols, A. (2011). Rural Hospital Ownership: Medical Service Provision, Market Mix, and Spillover Effects. Health Services Research, 46(5), 1452-1472. doi: 10.1111/j.1475-6773.2011.01280.x

Jabbari, A., Rahimi Zarchi, M. K., Kavosi, Z., Shafaghat, T., & Keshtkaran, A. (2013). The marketing mix and development of medical tourism in shiraz. Mater Sociomed, 25(1), 32-36. doi: 10.5455/msm.2013.25.32-36

Lega, F. (2006). Developing a marketing function in public healthcare systems: a framework for action. Health Policy, 78(2-3), 340-352. doi: 10.1016/j.healthpol.2005.11.013

Leiderman, E. B., Padovan, J. L., & Zucchi, P. (2010). Hospital marketing: characterization of marketing actions in private hospitals in the city of Sao Paulo - Brazil. World Hosp Health Serv, 46(4), 30-33.

Lin, S. M. (2011). Marketing mix (7P) and performance assessment of Western fast food industry in Taiwan: An application by associating DEMATEL (Decision making Trial and Evaluation Laboratory) and ANP (Analytic Network Process). African Journal of Business Management, 5(26), 10634-10644.

Mittler, J. N., Landon, B. E., Fisher, E. S., Cleary, P. D., & Zaslavsky, A. M. (2010). Market variations in intensity of Medicare service use and beneficiary experiences with care. Health Serv Res, 45(3), 647-669. doi: 10.1111/j.1475-6773.2010.01108.x

Nasiripour, A., Mahmoudi, G., & Raeissi, P. (2012). The effective component of access to hospital care in Iran. Journal of Food, Agriculture & Environment, 10(1), 822-827.

Nasiripour, A., Tabibi, S. J., Raeisi, P., & Jahani, M. A. (2010). Designing model for hospital services globalization in Iran. Journal of Babol University of Medical Sciences, 12(1), 86-94.

Parmar, G., & Pandya, V. (2015). A systematic review of vm scheduling schemes for energy optimization in cloud environment. International Journal of Advance Research in Computer Science and Management Studies, 3(6), 44-49.

Sreenivas, T., Srinivasarao, B., & SrinivasaRao, U. (2013). 7Ps in corporate hospitals – Administrators' perspective. African Journal of Business Management, 7(43), 4363-4379.

Yaghoubi, M., Agharahimi, Z., Karimi, S., & Javadi, M. (2011). Factors Affecting Patients' Preferences in Choosing a Hospital Based on the Mix Marketing Components in Isfahan. Hakim Research Journal, 14(2), 106-114.

York, A. S., & McCarthy, K. A. (2011). Patient, staff and physician satisfaction: a new model, instrument and their implications. International Journal of Health Care Quality Assurance, 24(2), 178-191. doi: doi:10.1108/09526861111105121

Zare Zadeh, M., Vafaei Nasab, M. R., & Hajian, N. (2013). Attitude of Supervisors of Yazd Educational Hospitals towards the Role of Personnel Element on the Market Share of Hospital Services. Journal of Community Health Research, 2(2), 131-137.

Zelená, A. (2014). Improving the Public Image of the Uherskě Hradiště Hospital: Univerzita Tomáše Bati ve Zlíně.