



Does the Physical Evidence in Emergency Department Affect the Loyalty of the Beneficiaries in Jordanian Healthcare Organizations?

Tareq N. Hashem^{1*}, Mahmoud S. Issa¹, Giulia Iapadre¹ and Farah I. Hamdan¹

¹ Department of Marketing, Faculty of Business, Al-Isra University, Amman, Jordan

² Department of Emergency Medicine, University of Jordan, Amman, Jordan

³ Department of Marketing, University of Jordan, Amman, Jordan

*Corresponding e-mail: Tareqhashem1975@yahoo.com

ABSTRACT

Healthcare organizations are facing increasing competition in the Jordanian marketplace and must find ways to increase customer loyalty and trust to stay relevant in the healthcare marketplace. The objective of this study is to analyze the impact of the physical environment factors in emergency department effect on beneficiaries' loyalty. The study population consisted of all Jordanian beneficiaries who visited the emergency department in any hospital whether government, private, or university hospitals. The researchers sent out a questionnaire for 400 Jordanian subjects who visited the emergency department. In total, 333 questionnaires were retrieved. The study concluded that physical environment factors of the emergency department can have a positive impact on patient loyalty through the interaction of four dimensions (ambient factors, design factors, equipment and staff members factors, medical management factors). When analyzed separately, the design factors had no positive impact on patient loyalty. The study also concluded that medical Management Factors had the highest impact on patient loyalty. With respect to demographic variables, 59.2% of individuals visited the emergency department 2-5 times/year and 44.4% of the sample visited private hospitals for emergency cases. The study recommends healthcare organizations to focus on physical environment factors to attract patients and make them loyal.

Keywords: Healthcare services, Patient trust, Patient loyalty, Physical environment, Healthcare organizations

INTRODUCTION

According to the demographic and health indicator in the Jordanian ministry of health in 2016, in the last few decades the healthcare sector, particularly the private sector, has experienced a rapid expansion and appears poised to continue this expansion in the coming years [1]. Based on current and future growth, competition between healthcare centers and hospitals is expected to continue to increase and every healthcare organization will need to focus on patient satisfaction to continue to compete in this sector [2]. In other words, healthcare organizations will need to build and maintain patient loyalty to ensure their own chances at continuity [3]. One way to garner patient loyalty is by striving to continuously improve services the healthcare organization provides [4]. Improving service quality becomes a critical aim of an organization, especially for service section. That gives a strong indicator of how much is it important to build trust with patients beside their loyalty. Trust has been considered as a motivation in the relationship between dealers and purchasers to acquire customer satisfaction [5].

Unlike, typical market dynamics where the service is what is provided by a supplier to a buyer, services in a healthcare organization is not tangible and thus is not measurable [6]. Due to intangible and invisible services (i.e. medical treatment), healthcare organizations need to focus on physical environment factors to attract and retain patients.

However, many questions about remain unanswered for the following areas: realizing that medical treatment and other services provided by healthcare centers is difficult to be evaluated or observed by patients, do healthcare centers focus on physical factors? Do physical spaces impact a consumer's decision to select this center for treatment? How does the physical space factor compare to other factors such as advice from family members, facility reviews, and the presence of contagious diseases? Can physical factors contribute to patient loyalty? Is the physical environment one

of the reasons that why patients prefer one healthcare center over another? This study tries to examine whether the tangible physical environment in the emergency department in the hospital and all the other healthcare organizations have a role in establishing loyalty in patients particularly in emergency departments, and what dimensions could constitute the healthcare physical environment. The objective of this study is to determine the impact of physical environments on customer's choices with regards to healthcare organizations.

This paper will be beneficial to hospital managers and doctors who owned medical centers, and who are competing with larger organizations by creating a subset of loyal customers through improving the physical environment and ambience in the emergency department.

Literature Review

This section presents a brief discussion of the main concepts of this study which they are: healthcare services, patient trust, patient loyalty, and the physical environment in healthcare organizations.

Healthcare services: A century ago, families were the main supplier of healthcare services in their homes. Doctors were requested only as the last refuge when home treatments and care were ineffective. Regrettably, doctors had at that time little efficacious medications behind what destitute families could provide. The recent advancement in medical treatments, equipment, and technologies exceeded the medical care that family members could provide, or doctors could bring with them, and as such the practice of medicine and even the structures of healthcare delivery changed. Hospitals became more associated as scientific places, where doctors were provided care in clean, antiseptic surgical rooms, and nurses accomplished doctor orders in a controlled environment [7]. This led to the development of healthcare organizations with clear objectives and also a shift in the marketplace of healthcare services. In terms of objectives, the primary objective of any service provider is to achieve a consumer's expectations in their given target market. Healthcare services organizations, such as hospitals emergency department, try to achieve that objective by decreasing the gaps between expectations and experiences that patients seek [8]. The success of meeting this objective, for patient's, was the expectation to heal and get good service, which creates their satisfaction and loyalty [9]. In term the marketplace, as the competitiveness of the healthcare marketplace increased, healthcare organizations began shifting their business plans from selling services to marketing services and began targeting customers who seek high medical care at a sensible cost [2].

Currently, the major stakeholders involved in the healthcare market competition are the providers of the goods and services (physicians, hospitals, health insurers), the purchasers (employers, individual consumers, public health), and a third party that facilitates or sets the rules for the exchange and use of information [10]. One area that health services have experienced increasing pressure due to rapid growth in the management of emergencies at casualty centers. Early and effective treatment of patients at casualty centers could lead to a substantial reduction in hospital costs and mortality and thus increase competitiveness [11].

Finally, the exploration of healthcare as a service and its importance has been explored in multiple studies. Burger and Malhotra in 1991 inspected the outcome of their study on product-line management as a management tool for the healthcare industry. Salgaonkar in 2006 mentioned that one of the main goals of a hospital or any other healthcare center is to develop a persistent medication relationship with patients and foster trust for the facility [12]. In addition to the customer's trust, service quality defines the success of hospitals. Kotler and Keller in 2009, mentioned service quality as a sufficient participation in the representation of distinguishing and competitive strategy in every marketing principles, in each manufacturer or service provider [13]. Sohal in 1994 stated that the service quality is the greatest challenge tended by service organizations [14]. Thus, improving service quality becomes a critical aim for an organization, especially for the service economy. That gives a strong indication of how important it is to build a patient's trust in addition to their loyalty.

Patient Trust and Patient Loyalty

Patient trust: Hospitals are medical service business based on statements of trust; therefore, the concerns of service quality, patient satisfaction, and patient loyalty define the success of hospitals or any other healthcare organization [4]. Many previous studies showed that the customer satisfaction has a significant and positive effect on customer trust [15-17]. Other causality shows that the customer satisfaction has a positive and significant effect on customer loyalty [18,19]. There are another group of studies which emphasizes that customer trust has a positive and significant impact

on customer loyalty [15,18]. The findings of past studies clarify that satisfied customers have trust and loyalty in using the services, but still, there is a discrepancy in the findings until Ramli and Sjahrudin in 2015, provided evidence that high patient satisfaction does not translate to an increase in a patient's loyalty, but high patient satisfaction does increase a patient's trust [20]. In addition, the patient's trust impacts a patient's loyalty to healthcare services. So, to make patient loyal, healthcare centers do not need to make the patients satisfied as much as it needs to build trust through some dimensions leading to the establishment of loyalty. Huang and Liu in 2010 confirmed that the capacity of a company to preserve customer loyalty is affected by many factors; among others are the customer satisfaction and trust [21]. The highest level of service to achieve is to find an effective way to increase trust and customer loyalty.

Customer trust is defined as the person's desire to reach expectation of needs and wants in what partners will deliver [22]. Trust is considered as a motivation in the relationship between dealers and purchasers to acquire customer satisfaction [5], while customer satisfaction is a major reason to build customer trust that achieves and satisfy consumers to become loyal ones. Everything a patient sees, hears, feels and experiences in a healthcare setting should ingrain trust [9]. Ramli and Sjahrudin in 2015 assumed in their study that the variable patient satisfaction indirectly affects the loyalty of patient, which is mediated by the patient's trust [20]. Patient loyalty is gaining attention among healthcare service providers in an increasingly competitive marketplace [23].

Patient loyalty: To garner customer loyalty, companies need to expend substantial effort to build a marketing program that put customers at the center of all its activities. However, it important to note that customer's loyalty is specified by the feature of the consumers [3]. Dick and Basu in 1994 explained the meaning of customer loyalty as the connection between the customer's attitude and any presence of good, service, store, and dealer and customer's favoritism behavior [24]. Indrayani in 2016 identified three separate dimensions of customer loyalty: attitudinal loyalty, cognitive loyalty, and behavioral loyalty [25]. The importance of customer loyalty is not just for tangible goods, but also for service firms that provide less tangible products such as healthcare services. Customer loyalty in the healthcare field varies significantly from other domains, because of the unique and very personal nature of healthcare services [3]. In general, consumers can avert or delay a decision about a product or service, however, in healthcare sectors, consumers might not be able to make such options since avoiding or delaying the decision may have a dangerous impact on their health leading to bad health or even death [12]. The focus of previous studies on patient loyalty was for cases of chronic and non-communicable diseases that desire regular quality of services and care [26]. At the same time, loyal patients direct the surrounding community to the hospital by word of mouth, which is not only cost-effective but also free [27]. This is important since due to intense competition between the healthcare services providers, patient loyalty is an increasing concern [23].

Kesuma, et al., in 2013 showed that when customers of a private hospital felt that the service quality met their expectation or more, they would be satisfied and loyal, therefore, the private hospitals need to improve their technology and medical science as a mechanism to obtain loyal patients. Patients come to healthcare to heal from illnesses. Thus, the essence of healthcare provider has to create positive physical and psychological relations between doctors and patients to raise loyalty [12]. Service providers, including healthcare providers, have to raise the number of loyal customers critically by engaging with customers, suppliers, and other service providers within the same sector [3].

Physical Environment

The historical background of the physical facilities started around the 1980s when the organizational structure of a physician's practice was small or solo groups. Hospitals provided the physical instrumentation for patients taken in or out of care and provided funding sources for devices like sophisticated diagnostic and imaging technologies [28]. Sreenivas, et al., explained the marketing strategy in the hospital applying the 7P's (product, price, place, promotion, people, physical evidence and process) because services are not tangible thus focusing on a marketing mix (such as 7 P's) makes the physical environment notable by the patient and their relatives and can influence their loyalty [2]. Back to previous studies, the physical environment is determined by different factors. One of the obvious factors, indispensable in any medical care organizations, is the medical staff of hospitals. Good communication by doctors, nurses, and other parties at the clinic/hospital has a positive and significant impact on patient satisfaction [12]. The feeling of happiness or disappointment and management experience all enforce the patient satisfaction with the services received from a hospital [12]. The marketing relationship between healthcare providers and patients can be very important to the latter's evaluating the healthcare organization [3].

A lot of previous studies explain the factors of the physical environment in a healthcare organization. According to Gbetor, et al., in 2013, the physical evidence grouped into 3 types:

- Ambient factors such as noise level, hospital environment, hospital's place of convenience are hygienic.
- Design factors such as out patients department (OPD) and lobbies of units are spacious, sitting facilities, Out Patients Department unit, is always overcrowded during OPD sessions, patient's cards and folders, the structures of the buildings are very attractive, the colors of the physical facilities.
- Social factors such as the nursing staff understood patient needs; the nursing staffs were able to provide prompt right the first time, the staff looks attractive, professional and elegant.

In addition, Philip in 2016 expanded upon the factors with the elements of physical evidence and defined them as either essential or peripheral evidence [29,30]. Essential evidence is any factor associated with the building area, customer information, signboards, parking area, medical equipment, waiting room, consultation room, payphone, hygiene, and cleanliness. The peripheral evidence is any factor associated with the admission card, medical reports, billing statements, and brochures. Motwani and Shrimali in 2014 mentioned the physical evidence as a part of the marketing mix [31], and identified the following important aspects of physical evidence:

- The physical design of the hospital [32].
- Amenities, signs, symbol, and artifacts [33].
- Ambient conditions [34].
- The general condition of the equipment and the neat appearance of staff members [35].
- Energy Efficiency and Indoor Air Quality [36].

In the study of Ulrich and Zimring in 2004, they cited the following:

- **Reduce staff stress and fatigue and increase effectiveness in delivering care:** Improve staff health and safety through environmental measures, and increase staff effectiveness, reduce errors, and increase staff satisfaction by designing better workplaces.
- **Improve patient safety:** Reducing infections caused by airborne pathogens, reducing infections by increasing hand washing, reducing infections with single-bed rooms, reducing medication errors, reduce patient falls, improve patient confidentiality and privacy.
- **Reduce stress and improve outcomes:** Reduce noise, improve sleep, reduce spatial disorientation, reduce depression, provide nature and positive distraction, provide social support, and improve communication to patients.
- **Improve overall healthcare quality:** Provide single-bed patient rooms, reduce the length of stay, and increase patient satisfaction with the quality of care [37,38].

PATIENTS AND METHODS

The study's instrument

This study is a quantitative study. The study objective is to find if the physical environment in hospitals or any other healthcare organizations with its four factors (the ambient factors, the design factors, the equipment and staff members, the medical management factors) has an impact on patient's loyalty. The researchers designed a questionnaire of two parts: the first part includes the demographic information consisted of 7 items. The second part includes 25 statements that measure the factors of the physical environment in hospitals.

Population and Sample

The study population consists of all Jordanian patients who either themselves used the healthcare services or their relatives have used. The convenience sample was used. The researchers distributed around 400 questionnaires, but only 333 questionnaires were collected.

RESULTS

The Study Model and Study Hypotheses

The study model: Table 1 summarizes the previous studies used to build research model. This study is limited to emergency rooms (ER) in hospitals or urgent centers. The pressure on health services is growing in terms of handling the major issues connected with the management of emergencies at casualty centers. Early and effective treatment of patients could lead to a substantial reduction in hospital costs and mortality. So the hospital must struggle to achieve patient satisfaction [2].

Table 1 The previous studies for determination of physical environmental factors in the emergency department in healthcare organizations

Study	Factor Type	Factor Description
Gbettor et al., (2013)	Ambient Factors	Noise level, the hospital environment is pleasant; the hospital's place of convenience is hygienic.
	Design Factors	Out patients department (OPD) and lobbies of units are spacious, sitting facilities, out patients department unit is always overcrowded during OPD sessions, patient's cards and folders, the structures of the buildings are very attractive, the colors of the physical facilities.
	Social Factor	The nursing staff understood patient needs; the nursing staffs were able to provide prompt right the first time, the staff looks attractive, professional and elegant.
Philip, (2016)	Essential evidence	Building area, customer information, sign boards, parking area, medical equipment, waiting room, consultation room, payphone, hygiene, and cleanliness.
	Peripheral evidence	Admission card, medical reports, billing statements, and brochures.
Motwani and Shrimali, (2014)		The physical design of the hospital [32]
		Amenities, signs, symbol, and artifacts [33]
		Ambient conditions [34]
		The general condition of equipment and neat appearance of staff members [35]
Ulrich and Zimring, (2004)	Reduce Staff Stress and Fatigue and Increase Effectiveness in Delivering Care	Improve staff health and safety through environmental measures, increase staff effectiveness, reduce errors, and increase staff satisfaction by designing better workplaces.
	Improve Patient Safety	Reducing infections caused by airborne pathogens, reducing infections by increasing hand washing, reducing infections with single-bed rooms, reducing medication errors, reduce patient falls, and improve patient confidentiality and privacy.
	Reduce Stress and Improve Outcomes	Reduce noise, improve sleep, reduce spatial disorientation, reduce depression, provide nature and positive distraction, provide social support, and improve communication to patients.
	Improve Overall Healthcare Quality	Provide single-bed patient rooms, reduce the length of stay, and increase patient satisfaction with the quality of care.

The previous comparison between studies shows that they complement one another. So, this research is going to identify the physical environment in the following points:

- **Ambient factors:** Cleanliness and hygiene are provided in the emergency room facilities. Attention is paid to reduce disturbances to patients in the emergency room, adequate parking lots are available for patients in the hospital, sufficient seats are available in waiting area, sufficient beds available for patients in the department.
- **Designs factors:** Comfortable seats are available for waiting, use comfortable colors for patients in the emergency department, the emergency department building is designed in an attractive manner, comfortable lighting is available for patients and companions, the emergency department has a high level of safety, and attention is given to the availability of clear guidelines and signs for emergency department.
- **Equipment staff member's factors:** The accuracy in patient diagnosis, the increase in patient care, concerning about developing the medical equipment in the emergency department on an ongoing basis, the commitment to deadlines given to patients, the concern in the efficiency of physicians and hospital staff.

- **Medical management factors:** the significant improvement in the health service provided in the department, attention is paid to a good attitude to patients in the department, attention is paid to the quality of the food served in the department, and there are an urgent care and follow-up of management to the emergency department patients.

The breakdown of the demographic data is shown in the following Tables 2-8:

Table 2 indicated that the sample majority was females with a percentage of 52.3% and a frequency of 174 individuals. On the other hand, 47.7% of the sample was males with a frequency of 159 individuals.

Table 2 Sample characteristics according to gender

Variables	Frequency	Percent (%)
Male	159	47.7%
Female	174	52.3%
Total	333	100.0%

Table 3 indicated that the age group 25-35 years old has the highest percentage with a percentage of 37.2% and a frequency of 124 individuals. On the other hand, 32.1% of the sample was Less than 25 years with a frequency of 107 individuals.

Table 3 Sample characteristics according to age

Variables	Frequency	Percent (%)
Less than 25 years	107	32.1%
25-35 years	124	37.2%
36-45 years	46	13.8%
More than 45 years	56	16.8%
Total	333	100.0%

Table 4 indicated that the majority of the sample is married with a percentage of 56.2% while, 42.9% of the sample is single.

Table 4 Sample distribution according to marital status

Variables	Frequency	Percent (%)
Single	143	42.9%
Married	187	56.2%
Divorced	-	-
Widowed	3	0.9%
Total	333	100.0%

Table 5 shows that 34.8% of the sample monthly income was 401-800 JD/month. Followed by individuals whose income was less than 400JD/month.

Table 5 Sample distribution according to Monthly income in local currency (Jordanian Dinar)

Variables	Frequency	Percent (%)
Less than 400 JD	102	30.6
401-800 JD	116	34.8
801-1200 JD	59	17.7
1201-1600 JD	21	6.3
More than 1600 JD	35	10.5
Total	333	100

Table 6 shows that 64.6% of the sample has a bachelor's degree, while 15.3% were graduated.

Table 6 Sample distribution according to educational level

Variables	Frequency	Percent (%)
High school	25	7.5%

College degree	42	12.6%
Bachelor's degree	215	64.6%
Graduated degree	51	15.3%
Total	333	100.0%

Table 7 shows that 59.2% of the sample visited the emergency department 2-5 times/year.

Table 7 Sample distribution according to number of visits the emergency department per year

Variables	Frequency	Percent (%)
It is the first time	82	24.6%
2-5 times/year	197	59.2%
6-10 times/year	28	8.4%
More than 10 times/year	26	7.8%
Total	333	100.0%

Table 8 shows that 44.4% of the sample visited private hospitals in emergencies.

Table 8 Sample distribution according to the type of the hospital

Variables	Frequency	Percent (%)
Government Hospital	73	21.9%
University Hospital	112	33.6%
Private Hospital	148	44.4%
Total	333	100.0%

Reliability Test

A reliability test was carried out using Cronbach's' alpha, the result showed a value of (0.973) for all items as well as alpha for each variable is greater than accepted percent 0.60, which is a reasonable value.

Variables of the Study

Table 9 indicates that there is a negative attitude of participants towards the ambient variable. Since paragraphs mean is less than 3.00. The table also indicates a good indicator and there is a positive attitude of participants towards the rest variables because paragraphs means are higher than 3.00.

Table 9 Descriptive statistics of study variables

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Ambient	333	1	5	2.9219	1.15363
Design	333	1	5	3.0310	1.08215
Equipment	333	1	5	3.1231	1.04586
Medical	333	1	5	3.0895	1.04630
Loyalty	333	1	5	3.2649	1.10851

Study Hypothesis

The research will test the following hypotheses:

The main hypothesis:

Hypothesis 1: There is a positive impact of emergency department physical evidence in hospitals on patient loyalty through the four dimensions (ambient factors, design factors, equipment and staff member's factors, medical management factors) collectively.

Hypothesis 2: There is a positive impact of emergency department physical evidence in hospitals on patient loyalty through the four dimensions (ambient factors, design factors, equipment and staff member's factors, medical management factors) separately.

Sub-hypotheses derived from the Hypothesis 2:

Hypothesis 2.1: There is a positive impact of ambient factors on patient loyalty.

Hypothesis 2.2: There is a positive impact of design factors on patient loyalty

Hypothesis 2.3: There is a positive impact of equipment and staff members on patient loyalty.

Hypothesis 2.4: There is a positive impact of medical Management factors on patient loyalty.

Hypothesis Testing

Main Hypothesis: The physical environment factors of the emergency department in hospitals have a positive impact on patient loyalty by the four dimensions (ambient factors, design factors, equipment and staff member's factors, medical management factors)

Multiple regressions were used to test this hypothesis. It was found that R-value=0.854 is the correlation of the physical evidence of the emergency department in hospitals and patient loyalty by the four dimensions. Also, it is found that the F-value=221.408 is significant at 0.05 level. Thus, the physical evidence of the emergency department in hospitals has a positive impact on patient loyalty (Table 10).

Table 10 Model summary

Model	R	R Square	Adjusted R Square	Std. The error of the Estimate	
	.854 ^a	0.73	0.726	0.57978	
ANOVA ^b					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	297.703	4	74.426	221.408	.000 ^a
Residual	110.256	328	0.336	-	-
Total	407.959	332	-	-	-
Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	t	
(Constant)	0.34	0.105	-	3.24	0.001
Ambient	0.168	0.055	0.174	3.049	0.002
Design	0.071	0.062	0.069	1.139	0.256
Equipment	0.309	0.058	0.292	5.351	0
Medical	0.407	0.063	0.384	6.422	0

Above table shows that:

- The ambient factors of the emergency department in hospitals have a positive impact on patient loyalty.
- The design factors of the emergency department in hospitals have no positive impact on patient loyalty.
- The equipment and staff member's factors of the emergency department in hospitals have a positive impact on patient loyalty.
- The medical management factors of the emergency department in hospitals have a positive impact on patient loyalty.

Also, it is found that medical management factors have the highest impact on patient loyalty.

DISCUSSION

The study revealed that 44.4% of the sample survey, visited private hospitals during emergencies. It was the highest percentage in comparison to government and university hospitals. Patients prefer to obtain their treatment in a private hospital because of existing, which means, hospital management must aim for patient's loyalty. The analytical data of this paper shows that more than the half of the sample size (59.2%) visited the emergency department 2-5 times/year. This high percentage of emergency room visits indicates that hospitals must aim to satisfy patient and build the patient's trust in addition to their loyalty. One way, a hospital can increase patients' loyalty is through improving the physical environment in emergency departments due to the impact of physical environmental factors on patient loyalty.

Summarizing and building upon previous studies, physical environment factors in healthcare organization can be split

into four factors: the first factor is the ambient factors (cleanliness and hygiene is provided in the emergency room facilities, attention is paid to reduce disturbances to patients in the emergency room, sufficient seats are available in waiting area, sufficient beds available for patients in the department). The second factor is the design factors (comfortable seats are available for waiting, use comfortable colors for patients in the emergency department, the emergency department building is designed in an attractive manner, comfortable lighting is available for patients and companions, the emergency department has a high level of safety, attention is given to the availability of clear guidelines and signs for emergency department). The third factor is the equipment and staff member's factors (the accuracy in patient diagnosis, the increase in patient care, concerning about developing the medical equipment in the emergency department on an ongoing basis, the commitment to deadlines given to patients, the concern in the efficiency of physicians and hospital staff). The fourth factor is medical management factors (the significant improvement in the health service provided in the department, adequate parking lots are available for patients in the hospital, attention is paid to good attitude to patients in the department, attention is paid to the quality of the food served in the department, there are an urgent care and follow-up of management to the emergency department patients).

CONCLUSION

The hypothesis testing indicates that interaction of four physical environment factors (ambient factors, design factors, equipment and staff members factors, medical management factors) of the emergency department in hospitals have a positive impact on patient loyalty. However, when tested individually only ambient factors, equipment, staff member's factors, and medical management factors have a positive impact on patient loyalty. The design factor of the emergency department in hospitals alone has no positive impact on patient loyalty. This study provides hospital managers and emergency department heads with a focus on where and how to spend limited resources to improve patient loyalty. Spending limited resources on improving the other factors such as the medical treatment, the good behave with patients and encourage the staff members of doctors and nurses to deal kindly with patients, using new equipment and tools, and follow the latest in the medical technology world would provide a bigger rate of return (in terms of patient loyalty) than on design factors.

DECLARATIONS

Conflict of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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