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Hoteling Services Quality in Teaching Hospitals of Iran: Model Development and Validation

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Abstract

Background: Based on the importance of quality of hospital hoteling services on health system outcomes and lack of a valid assessment method to determine and implement the required strategies to evaluate and improve the service quality, the current study aimed at determining factors affecting the quality of hoteling services in teaching hospitals affiliated to universities in Iran.
Methods: The current cross sectional study was designed in 2 phases of qualitative and quantitative. In the 1st phase, factors affecting the quality of hospital hoteling services were extracted from the literature and through an in-depth interview with 11 experts (6 from healthcare administration and 5 from the Iranian hoteling industry organization).In the 2nd phase, the data from the 1st phase were integrated and a model for the improvement of the quality of hospital hoteling service was designed. The model was validated through a qualitative (expert opinion) and quantitative approaches (exploratory and confirmatory factor analysis). The data of the factor analysis were collected from 960 patients in 10 teaching hospitals from 10 different cities across the country.
Results: The findings of the current study indicated that 11 factors (physical, functional, economical, human factor, social welfare services, clinical welfare services, safety, cultural, personnel identification, patient guide factors, and healthcare services) explained 65.81% of the variances in the quality of hoteling services. Based on the conformity factor analysis, functional and personnel identification factors with a coefficient of 0.953 and 0.779 had the highest and lowest weight to explain the variance of the quality of the hoteling services, respectively, in the teaching hospitals affiliated to different medical universities in Iran.
Conclusions: Hoteling services quality model has a multidimensional construct and in the current study 11 important ones were identified, out of which functional and personnel identification factors had the highest and lowest weight in explaining the variance of the stated construct.

Keywords: Hospital, Hoteling Services, Quality, Patients, Health Policy

1. Background

The hospitality in healthcare is a complex process, which depends on detailed planning and maintaining factors such as system obligations, hardworking, and financial limitations. If these factors are properly investigated, there will be a considerable opportunity to implement warm hospitality in this sector (1, 2). Hospital administrators should be aware of hospitality concepts and hotel management and how to promote strategies of service delivery, patient satisfaction, and overall operations (3, 4).

In recent decades, the hospital design is inspired by hotels and amid at fulfilling patient satisfaction, family expectations, and financial aspects of the services.

Literatures suggest 3 key factors of human, physical, and functional aspects that are the strongest factors affecting service quality (5-9). Functional factors are whatever affects the client's image about the quality of technical services. Physical factors can be felt by the 6 senses (smells, sounds, and images). These inanimate factors such as facilities, equipment, designs, lights, and other sensory factors communicate with clients in a very strong non-verbal manner. And finally, the human factors influence the clients by the provider's behavior or his/her appearance (type of speech, speaking tone, self-esteem, and clothing) (10).

In other words, the functional factors primarily refer to the entity of services; while, the human and physical factors refer to how these services are delivered. For instance, a service can be proper in terms of functional factors, but create a negative impression on delivery. Patients are more aware than providers, while receiving medical services. In fact, patients act as a detective in the analysis of these experiences (11).

It is well established that the high quality services should be offered to attract new clients. Nowadays, the patients want to rely on hospitals as therapeutic centers and compare them with a hotel in creating an acceptable environment, facilities, services, and accommodation (12, 13).

Therefore, the hospital managers should be aware of hoteling services that affect patient satisfaction, welfare, and the provided care (3).

A good hoteling services is a valuable asset that no hospital administrator can ignore. In fact, hoteling service is an important variable to ensure quality assurance in hospitals (14-16). An improved quality practice requires management commitment to service excellence and hoteling practices across the organization. Yet, the hoteling service promotion is emphasized in recent Iranian healthcare reform. Although the dimensions of improvement of the quality of hoteling services in Iran are still unclear, identification of criteria and examining assessment indicators are very important issues.

Based on the importance of quality of hoteling services in hospitals on health system outcomes and lack of a valid assessment method to determine and implement the required strategies to evaluate and improve the service quality, the current study aimed at determining the factors affecting the quality of hoteling services in teaching hospitals affiliated to the universities in Iran.

2. Methods

The current cross sectional study utilized a mixed method approach (qualitative-quantitative) to collect the data from September 2014 to September 2015. The study was approved by the review board of health services management department and the ethics committee of the Islamic Azad University, Science and Research Branch, Tehran, Iran.

The study was conducted in 2 phases as follows:

First phase (the qualitative phase):

In this phase, factors affecting the quality of hoteling services in hospitals were extracted through the literature review and an in-depth interview with11 experts (6 from healthcare administration and 5 from Iranian hoteling industry organization) to generate the data to design the intended model. In the literature review, the factors influencing the quality of hospital services were identified. In the in-depth interviews, 6 nationally known experts from healthcare administration with average experience of 9 years, and 5 experts from Iranian hoteling industry organization were selected, based on the target sampling method, and interviewed till data saturation. To have a more holistic view, it was tried to select managers rather than other professionals.

Based on the outputs of in-depth interviews, the most important themes were identified to be included in the model. Thus, by combining the findings of the 2 abovementioned studies, a tentative model was designed. Validity of the overall model was also checked by expert opinions, and final dimensions were determined. Then, on each dimension, the items were written and a questionnaire with 190 items was developed.

The content and face validity of the questionnaire was checked based on the opinions of 30 experts.

At this stage, some of the items were omitted, and finally a questionnaire with 11 dimensions and 96 items was developed. A 5-point Likert scale, ranging from very low (1) to very high (5), was used to score the items.

Second phase:

In the 2nd phase, the researcher-made questionnaire was distributed among the patients of 10 teaching hospitals in 10 cities across the country.

The hospitals were selected based on the classification of teaching hospitals affiliated to medical universities arranged to determine quotas for clinical medicine specialties in 2014 - 2015.Based on the classification, hospitals affiliated to the top 10 medical universities of Mazandaran, Tabriz, Kermanshah, Ahvaz, Shiraz, Arak, Isfahan, Kerman, Mashhad, and Tehran were included. From the enrolled hospitals, 10 hospitals from the 10 medical universities that were the largest ones and had the highest admission rate and bed occupancy (mean rate of 800 active bed), based on the report from Iranian Ministry of Health were finally selected.

Therefore, in each hospital, based on hospital wards, 48 patients and their companions were selected by the convenience sampling method and 48 experts were selected, based on the target sampling method. The sufficiency of the population was 0.982, based on the Kaiser-Meyer-Olkin index.

The study population comprised of patients hospitalized in the mentioned teaching hospitals, their companions, and the healthcare quality experts. Using the Cochran formula, a sample size of 960 subjects was determined (480 patients and their companions, and 480 healthcare quality experts).

To achieve the study population, one-tenth of the total sample was selected from each hospital. The patients and their companions were selected from different wards of the hospitals using the stratified sampling method.

Inclusion criteria for patients were as follows:

-Hospitalization in 1 of the hospital wards

- Able to read and write to complete the questionnaire

-The age range of 15 to 75 years

- Good physical condition to respond to the questionnaire

Inclusion criteria for the companions were as follows:

- Having kinship with the patients
- The age range of 20 to 70 years
- Staying with the patient for at least 1 hospital shift
- Able to read and write to complete the questionnaire

Patients and their companions who did not cooperate appropriately were excluded and replaced. Companions with a history of health problems and hospitalization were excluded and replaced.

The experts were selected using the purposeful sampling method.

Inclusion criteria for experts were as follows:

-At least 5 years or more experience in the hospital managerial positions

-Those with relative educations employed in hoteling managerial positions

Those who were working in positions other than hospital/hotel management during the study, having less than 5 years managerial experiences and those who did not cooperate properly were excluded. Seven experts were excluded based on the criteria. Written informed consent was obtained from all participants after describing the purpose and methods of the study.

2.1. Statistical Analysis

Obtained data were analyzed using SPSS software, version 22(SPSS Inc., Chicago, IL, USA). An exploratory factor analysis was utilized to explore the dimensions of the model through a mathematical approach. The internal consistency of dimensions was estimated through Cronbach's alpha. Finally, a confirmatory analysis was used to verify the model.

3. Results

For the current study, 17 relevant models were extracted from the literature and their main dimensions were identified. Table 1 represents the findings of this part.

The findings of factor analysis, using varimax rotation, revealed that there were15 factors with Eigen value of more than 1.00 in the data. After cancelling the weak items from the analysis and testing the models with a different number of factors, a model with 11 factors was selected as an acceptable model (Figure 1). The 11 factors can explain 65.806% of the total variance of the quality of hospital hoteling services underlying construct. The Eigen values, percentage of variance explained by each factor after rotation, and total percentage of variance explained by all the factors are presented in Table 2.

Reliability of the items was evaluated using Cronbach's alpha reliability coefficient. The details for each item are presented in Table 3. The internal consistency of the questionnaire was approved (Cronbach's alpha coefficient = 0.85). The internal consistency of the 11 dimensions, including physical factors, functional factors, safety factors, economic factors, public welfare services, humane factors, patient guidance, cultural factors, personnel identification, healthcare services, and clinical welfare services were also approved. The Cronbach's alpha coefficient for the extracted factor ranged from 0.312 to 0.963.

A conformity factor analysis by AMOS version 22 software was used to verify the final model. The findings on fitness indices (Chi-square indicators, P value, relative chi-square, root mean square error of approximation (RMSEA), comparative fit index (CFI), normed fit index (NFI), and (parsimony comparative fit index (PCFI)) verified a model with 11 dimensions for the quality of hoteling services. Fitting indicators for the proposed model are presented in Table 4.

Physical dimension was represented by 19 items, functional dimension by 16 items, economical/ financial by 8 items, social welfare services by 11 items, safety by 11 items, cultural by 7 items, humanby10 items, Patient's guide by 5 items, personnel identificationby3 items, care by 4 items, and clinical welfare services by 2 items. In this model, the highest parameter estimation belonged to functional factor with 0.953 and the lowest belonged to personnel identification (0.780). There were direct and significant relationships between all factors with the underlying construct of the quality of hospital hoteling (Figure 2).

3.1. Second Phase Results

Out of the 960 questionnaires distributed initially, 815 questionnaires, 337 by the patients and their companions and 478 by the experts, were completed.

Analysis of the data received through the questionnaires indicated that from the view point of patients and their companions the human factor with the average score of 4.16 (0.86) and the welfare services with the average score of 3.68 (0.99) were the most and least important dimensions of the model, respectively.

From the view point of the experts, the most and the least important dimensions of the model were financial factors with the average score of 4.38 (0.68) and welfare services with the average score of 3.72 (0.89), respectively.

4. Discussion

The findings of the current study revealed that 11 factors were important in defining the underlying construct of the quality of hoteling services in the teaching hospitals affiliated to the medical universities in Iran, out of

Figure 1. The Model of Hoteling Services Quality in the Iranian Teaching Hospitals and the Standard Parameters Values

which functional and personnel identification factors had the highest and lowest share in explaining the quality of hoteling service variances, respectively. The factors were as follows: physical, functional, economical, human factor, social welfare services, clinical welfare services, safety, cultural, personnel identification, patient guide factors, and healthcare services.

All of the stated factors had direct and significant relationships with the quality of hospital hoteling underlying construct.

Based on the definition of health system transformation project, hospital hoteling services address all issues that results in inpatient well-being. They include all factors related to well-being, peace, and comfort of inpatients and their companions.

Healthcare system is primarily a profitable industry and the related authorities are interested in reducing the cost and increasing the quality of hospital practices (2). Patients prefer hospitals with high medical quality and appropriate hoteling services, lower costs, and very impor-

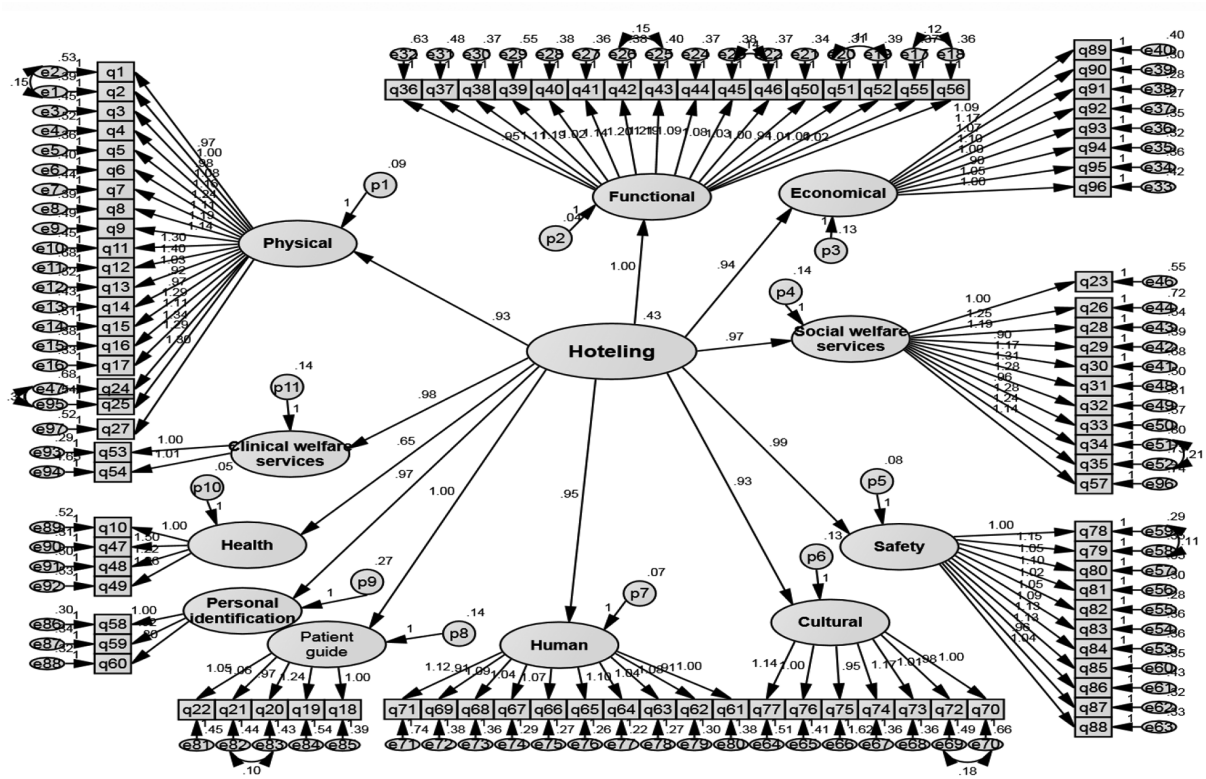

Figure 2. A Model of Hoteling Services Quality for Iranian Teaching Hospitals from the Viewpoints of Experts and Patients

tant services (VIP) treatments (18).

Noshiravani et al., indicated that improvement in the quality of medical service programs could provide patients' loyalty and satisfaction. Due to competitive market of medical services, hospitals can provide better services to the patients by investing in the quality of healthcare and their accommodation services (19). Montefiori examined the patients' criterion to select healthcare services. The results showed that the patients chose hospitals that met their expectations well, did not request direct payments, provided high quality services, and had pleasant atmosphere (20).

Hospital hoteling is a multidimensional construct and many factors could contribute to it (17). It seems that the influential factors and their weights and priority could be different among populations; therefore, the current study aimed at determining the most important factors influencing the quality of hospital hoteling services from the view point of the Iranian patients. Though there were some studies in this field from different parts of Iran, no nationwide study in this field evaluated the perceptions of patients about the quality of the hoteling services.

The current study findings identified 11 important factors that can explain construct dimensions of the quality of hoteling services. Functional and personnel identification factors had the highest and lowest share among the 11 important construct factors of the quality of hospital hoteling services, respectively. The results of the 2nd phase of the study indicated that according to the viewpoint of patients, the most important dimensions of the model was human factor, which included respecting personal values and human dignity, and honest and appropriate communication. The current study findings indicated that respecting the dignity of the patient was the main principle of hospital hoteling service evaluation system.

The world health organization (WHO) announced that the patients' rights should be implemented in each community based on their population, economic, social, moral, and cultural factors and the Ministry of Health and Medical Education of Iran provided the patients' rights in 5 topics in 2010 (7, 21).

Almost all studies in this field emphasized the high priority of this issue (22, 23).

Results of the study by NasiriPour et al., showed a significant and positive relationship between the communication skills and the quality of inpatient services in hospi-

tals. In addition, there was a significant and positive correlation between the communication skills and dimensions of service quality (tangible factors, reliability, accountability, and empathy). Generally, improvement of communication skills of hospital staff, can lead to increased quality of care in the centers (24).

Zarei et al., reported that the strong relationship between patients and hospital staff could provide better communication between the groups and consequently would result in better dealing (25).

Nelson stated that although design and reconstruction of a hospital is vital, it is very costly for healthcare systems. Factors forcing hospital managers to do their best in the design and construction include competing to raise the market share, innovation and new technologies, efficiency and cost-effectiveness, and regulatory compliance. Due to the growing knowledge and awareness about this topic, the physical environment is concerned as an important factor associated with patients' safety and satisfaction (26).

In the current study, both patients and experts considered welfare service factor as the least important dimension of the model. Though some studies indicated that insurance and welfare services were independent factors that could affect the quality of the service (27, 28) and some previous studies reported that the uninsured patients were less satisfied with the quality of hospital services (29). The current study results did not support such findings.

It may be due to the fact that after implementation of the health reform program in Iran since 2014, which provide different facilities for Iranian population such as increasing universal insurance coverage, payment system reform, and reducing payments outside the tariffs to promote the quality of health services (30, 31).

The gap between patients' and experts' viewpoints is about the most important dimensions of the model. According to the experts' ideas, financial factors were the most important dimensions of the model. It seems that most of the experts are involved in the executive activities of hospital hoteling; therefore, from their point of view financial factors are the most important factors in this field.

Wu et al., showed that despite the importance of providing a pleasant atmosphere in the hospital, paying attention to the cost-effectiveness of services to maintain high levels of medical services is virtual for all managers (1).

By focusing on the dimensions of quality of hoteling services, managers and service providers could provide proper strategies to reduce the gaps between patients' perceptions and expectation in this area. Furthermore, the current study findings, and experiences in this field can be used in quality improvement of other healthcare services such as outpatient services to fill the gaps between clients' perception and expectation.

One of the limitations of the current study was timing of data collection conducted during the hospitalization or discharge time of the patients. Other limitations of the study were the utilization of a quantitative evaluation using a questionnaire and lack of qualitative evaluation tools, and not including private hospitals in the study.

Although there were many obstacles such as lack of awareness, neglecting the topic, and considering it as an unimportant topic, it was tried, as much as possible, to make the participants aware of the importance of non-medical services in the healthcare industry.

The strength of the current study was its nationwide design and including teaching hospitals which are the referral centers for different patients with various diseases from different parts of the provinces. In addition, the study used the perspectives of both patients and their companions and experts in the studied field. However, the study would be more appropriate if the viewpoints of all hospital employees such as physicians and nurses were also evaluated, because unawareness of patients and their companions about the treatment processes could result in misunderstanding in the evaluation of the process.

4.1. Conclusion

The hoteling services quality has a multi-dimensional construct; the current study explored 11 important ones as physical, functional, economical, human factor, social welfare services, clinical welfare services, safety, cultural, personnel identification, patient guide factors, and healthcare services, out of which, functional and personnel factor had the highest and lowest role in explaining the variances of the quality of hoteling services, respectively. Based on the gap between the viewpoints of the patients and experts, the current study model can be used as a tool by hospital managers to decrease the gap and improve the quality of hoteling services. Human factor was the most important dimension according to the patients' viewpoint, which could be improved by paying more attention to the patients' emotional needs and expectations by the healthcare staff. Furthermore, managers and healthcare providers should develop strategies to establish cost-effective service.

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Table 1. Dimensions of the Reviewed Models on Quality Management Services

No.	Model	Year	Dimension
1	Parasuraman, Zeithaml (16)	1985	Tangibles, reliability, responsiveness, communication, credibility, security, competence, courtesy, understanding, knowing customers, and access
2	TQM	1987	Senior management support, customer relationships, relations with supplier, workforce management, employee behavior, process flow management, reporting, the role of quality, and indexing
3	Clinical Governance	1990	Education and training, clinical audit, clinical effectiveness, research and development, openness, risk management, and information management
4	Garvin (17)	1993	Performance, features, conformance, reliability, durability, serviceability, aesthetics, and perceived quality
5	Smith (4)	1994	Humility, clarity, accuracy, attention, and cleanliness
6	Karin and Hekel	1994	Functional factors, physical factors, and human factors
7	Will and Oakland	1994	Commitment and leadership of senior executives, planning, organizing determine culture, education and workforce training, using the tools and techniques, and measurement feedback
8	Flynn	1994	Senior management support, customer engagement, conflicts with the supplier, workforce management, quality improvement awards, process management, and feedback
9	Ahayer	1996	Senior management commitment, customer focus, supplier quality management, strengthening staff, using data on staff training, management of quality, use of internal quality, and indexing
10	Jayston	1998	Speed, courtesy, comfort and cleanliness, and friendly
11	Peter M. Senge	1998	Availability, communication smoother and faster, keeping in touch, quality, quality communications, integrity and honesty
12	Miory and Atkinson	1998	Guarantee the authenticity and integrity of service, empathy and cooperation, sustainability services, and accountability
13	Saraf	1998	The role of senior management and quality policy sectors, supplier quality management, training of staff, design, production and service

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Table 2. Eigen Values and the Analysis of Hospitals Hoteling Services Quality[a]

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	Variance, %	Cumulative, %	Total	Variance, %	Cumulative, %	Total	Variance, %	Cumulative, %
Physical	46.019	47.936	47.936	46.019	47.936	47.936	12.028	12.529	12.529
Functional	3.692	3.846	51.782	3.692	3.846	51.782	8.350	8.697	21.227
Economical	2.522	2.627	54.409	2.522	2.627	54.409	8.235	8.579	29.805
Social welfare services	1.842	1.919	56.328	1.842	1.919	56.328	7.805	8.130	37.935
Safety	1.703	1.774	58.102	1.703	1.774	58.102	5.345	5.567	43.503
Cultural	1.449	1.510	59.612	1.449	1.510	59.612	4.768	4.966	48.469
Human	1.379	1.436	61.048	1.379	1.436	61.048	4.536	4.725	53.195
Patient guide	1.298	1.352	62.400	1.298	1.352	62.400	4.286	4.464	57.659
Personnel identification	1.147	1.195	63.595	1.147	1.195	63.595	3.800	3.958	61.617
Healthcare services	1.084	1.129	64.725	1.084	1.129	64.725	2.589	2.696	64.313
Clinical welfare services	1.038	1.081	65.806	1.038	1.081	65.806	1.433	1.492	65.806

[a] Total Variance Explained

Table 3. Cronbach's Alpha Reliability Coefficient of the Items for Hospitals Hoteling Services Quality

Dimension	Cronbach's Alpha	Standard Parameter
Physical	0.963	0.889
Functional	0.960	0.953
Economical	0.934	0.863
Social welfare services	0.933	0.863
Safety	0.952	0.922
Cultural	0.863	0.862
Human	0.938	0.923
Patient guide	0.887	0.865
Personnel identification	0.844	0.780
Healthcare services	0.768	0.881
Clinical welfare services	0.312	0.869
Total	0.850	-

Table 4. Fitting Indices of the Proposed Model on Hospital Hoteling Services Quality

Statistics	Estimated Values	Optimal Value	Status of Index
Chi-square indicators	12872.927	The less is better	…
P value	0.000	> 0.05	×
Relative Chi-square	2.897	2 < - < 5	√
RMSEA	0.051	< 0.05, < 0.08	√
CFI	0.932	> 0.9	√
NFI	0.891	> 0.9	√
PCFI	0.801	> 0.6	√

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