


BMJ Open Quality Patient safety friendly hospital standards and customer orientation among Iranian nurses during the COVID-19 pandemic

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ABSTRACT

Background The quality of health services is determined on the basis of meeting customers' needs and expectations. Due to the COVID-19 pandemic, health systems have faced high degrees of uncertainty as well as a variety of challenges. Thus, this study aimed to investigate the relationship between patient safety friendly hospital standards and customer orientation among Iranian nurses during the COVID-19 pandemic.

Methods This cross-sectional, descriptive-analytical study was conducted on 266 nurses working in Imam Khomeini Hospital, Tehran, Iran selected via stratified sampling in 2020. The study data were collected using a questionnaire including demographic information, patient safety friendly hospital initiatives, and Kim's customer orientation scale. Then, the data were entered into the SPSS V.16 software and were analysed using descriptive statistics, dispersion indices and correlation tests.

Results The mean age and mean duration of working as a nurse were 38.60±7.94 and 13.87±7.41 years, respectively. From the nurses' perspective, the means of patient safety friendly hospital standards and customer orientation were 97.35±16.59 and 16.40±2.62, respectively, both of which were at the moderate level. In addition, patient safety friendly hospital standards and all its dimensions were positively correlated to customer orientation ($p<0.001$).

Conclusion From the nurses' viewpoint, the patient safety friendly hospital standards and customer orientation were both at the moderate level during the COVID-19 pandemic. In addition, patient safety friendly hospital standards and all its dimensions were significantly associated with customer orientation. In other words, increase in the patient safety friendly hospital standards was accompanied by an increase in the nurses' customer orientation. These results can provide the organisations delivering health services with the opportunity for management on the basis of multicriteria decision making so as to adapt with the patient safety friendly hospital standards and to internalise customer orientation among nurses.

INTRODUCTION

The quality of care services provided for patients is one of the main issues in organisations providing healthcare services.¹ Patient

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ To our knowledge, this is the first study to examine the relationship between the two variables patient safety friendly hospital standards and customer orientation among nurses during COVID-19 pandemic.

WHAT THIS STUDY ADDS

⇒ This descriptive-analytical study investigates the relationship between patient safety-friendly hospital standards, customer orientation among Iranian nurses during the COVID-19 pandemic, overall quality improvement, safe, timely, efficient, fair, cost-effective and patient-oriented services provided by all staff of the health system.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ These findings can help the organisations providing healthcare services to adapt with patient safety-friendly hospital standards and internalise customer orientation in nurses via management based on multicriteria decision making.

safety is one of the most important dimensions of care quality.² Despite the development of unique standards for measurement of patient care quality by many healthcare providing organisations, clinical errors still account for a considerable portion of financial and human costs.³ Evidence has indicated that 5%–10% of health-related expenditures are associated with unsafe clinical services, which harm patients and are accompanied by heavy economic burdens. In this context, systems and processes play a more pivotal role compared with individuals.⁴ Considering the high prevalence of medical errors in advanced healthcare systems and the related costs, various approaches have been developed to cope with these errors and improve patient safety. One of these approaches is the establishment of patient safety friendly hospitals.⁵ This implies that patient safety is accepted as a priority and that staff exhibit their best



performances. The ultimate goal of this programme is the promotion of patient safety in hospitals as well as the creation of conditions leading to the provision of safer services, protection of the society against preventable damages, and reduction of unwanted complications in the hospital environment.⁵ Some studies conducted in the selected Iranian hospitals indicated their moderate conformity to the essential safety standards. Since achieving all vital standards in all dimensions is necessary for reaching the lowest level of a patient safety friendly hospital, goal setting is required for achieving patient safety friendly hospital standards and adherence to safety friendly standards.^{6,7} Patient orientation (customer orientation) is one of the main targets of the WHO, which is necessary for the achievement of patient safety friendly hospital standards.

Due to the propagation of novel technologies as well as the growth of emerging markets for health services in the 21st century, people can choose the place for receiving healthcare services from a variety of options. As a result, organisations providing such services have faced different challenges. This has also resulted in a competitive environment for service providers due to uncertain environmental conditions, passive cooperation of insurance companies for payments, privatisation, increased hospital expenditures and increased staff's incomes. This has in turn necessitated the health sector's more attention to the attraction and maintenance of customers, because satisfied customers definitely come back for receiving services.⁸⁻¹⁰ The quality of health services is identified based on meeting customers' needs and expectations. In other words, customer satisfaction is determined in case the characteristics of the products or services are least deviated from customers' expectations. Overall, customer orientation refers to organisations' perceptions of their customers in order to provide them with the highest value.¹¹ In other words, it involves active responses to customers' needs under different turbulent circumstances.¹² In fact, organisations working in turbulent environments like hospitals encounter quick changes in customers' needs, preferences, demands and unexpected requirements. Considering the customers' ever-changing needs and expectations, these organisations have to be customer oriented.¹³ Since hospital customers are in fact patients, particular attention has to be paid to staff's customer orientation due to the specific nature of services, long period of service provision compared with other organisations, close relationship between patients and staff, and association of services with customers' emotions and feelings.¹⁴ In this context, nurses are among the country's most important workforce and the largest care group in the health system. Due to the provision of pioneer health services, nurses have the most sensitive position for responding to patients' various needs in order to perform safely and to ensure the health and safety of themselves, clients, and the environment.¹⁵ In the research carried out by Alavizadeh and Jadidi, the mean of patient-oriented care services was 3.93 ± 0.83 out

of 5 in a hospital in Tehran.¹⁶ Some findings of studies conducted in selected hospitals in Iran indicate that the maximum level of compliance with mandatory/basic safety standards is at a moderate level, and given that the achievement of 100% of vital standards in all aspects of the case Investigation is required to achieve the minimum level of patient safety friendly hospital; Targeting strategic and operational plans is necessary to achieve 'patient-friendly hospital standards' and adhere to safety-friendly standards.^{6,7} The results of another study showed that the studied hospitals had unfavourable conditions regarding patient safety standards.¹⁷ Therefore, the promotion of solutions and plans with the aim of implementing changes in order to achieve greater safety of stakeholders is considered as an increasing and urgent need of the health system.¹⁸

Since COVID-19 has spread all around the world¹⁹ and considering the fact that the prevalence of this infection was an unexpected event that resulted in a high degree of uncertainty and challenges for health systems, safety standards play a crucial role in safe performance for social responsiveness and maintenance of organisational resources, particularly human resources.²⁰ As mentioned earlier, patient safety friendly hospital standards and nurses' customer orientation are among the WHO's main targets of public healthcare.^{21,22} Considering the paucity of evidence regarding the relationship between patient safety friendly hospital standards and nurses' customer orientation in Iran, this study aims to determine the relationship between patient safety friendly hospital standards and customer orientation among nurses working in Imam Khomeini Hospital affiliated to Tehran University of Medical Sciences, as the largest treatment centre in the country.

METHOD Design

The present cross-sectional, descriptive-analytical study was conducted during the COVID-19 pandemic from April to December 2020.

Patient and public involvement

Patients or the public were not involved in the design, or conduct, or reporting, or dissemination plans of our research. The results of the study will be disseminated to all participants during their annual congress.

Participant and setting

The study setting was Imam Khomeini Hospital affiliated to Tehran University of Medical Sciences and the research population included all nurses working in this hospital. The inclusion criteria of the study were having at least a BSc degree, having taken care of patients with COVID-19 for at least a month, and being willing to cooperate. The participants were selected via stratified sampling. Since Imam Khomeini Hospital is the largest educational complex in Tehran and Iran and includes 50 general and special wards, the nurses working in the same positions

in different wards were assigned to one category. After all, the 50 wards were divided into 13 categories. Then, 866 eligible nurses in the 13 categories were considered for random sampling. Considering the CI of 95%, power of 90%, loss rate of 10% and correlation coefficient of 0.2 between patient safety friendly hospital standards and customer orientation and using the following formula, a 266-subject sample size was estimated for the study.

$$n = \frac{(z_{1-\alpha/2} + z_{1-\beta})^2}{u^2} + 3$$

Measurements

The study data were collected using an online questionnaire (<https://survey.porsline.ir/s/JctQYnD>) designed in Porsline software on the basis of aesthetic criteria. This questionnaire consisted of the nurses' demographic features, patient safety friendly hospital standards designed by Parvizi²³ in 2017 on the basis of WHO's Patient Safety Friendly Hospital Initiative (2016),²⁴ and Kim *et al*'s customer orientation scale.²⁵ The patient safety friendly hospital standards instrument contained 27 items divided into 5 dimensions, namely leadership and management (6 items), patient and public involvement (2 items), safe clinical practice (7 items), safe environment (6 items) and lifelong learning (6 items). The nurses were required to answer these items using a five-option Likert scale ranging from one (very low) to five (very high). It should be noted that item 21 was scored reversely. Thus, the total score of the questionnaire could range from 27 to 135, with higher scores representing higher conformity to patient safety friendly hospital standards. Accordingly, scores 108–135, 80–107 and 27–79 indicated high, moderate and weak conformity to patient safety friendly hospital standards, respectively. The reliability of the questionnaire was determined via computation of internal consistency and Cronbach's alpha coefficient. In doing so, the questionnaire was sent to 35 nurses selected randomly with a 1-week interval. It should be noted that these nurses were excluded from the research. The results revealed Cronbach's alpha coefficient of 0.838 for leadership and management, 0.629 for patient and public involvement, 0.857 for safe clinical practice, 0.719 for safe environment, 0.878 for lifelong learning and 0.934 for the whole questionnaire.

Kim's four-item customer orientation scale²⁵ was designed on the basis of Posdakoff and Mackenzie's scale²⁶ and its face and content validity were confirmed through factor analysis. Its reliability was also calculated as 0.87. In Iran, Dibachi *et al*²⁷ evaluated the content validity of this scale and confirmed its internal consistency by Cronbach's alpha=0.821. The items could be responded via a five-option scale ranging from one (very low) to five (very much) in nearly 1 min. The total score of the scale could be computed by summing up the scores of the four items, which could range from 4 to 20. Accordingly, scores 17–20, 13–16 and 4–12 indicated high, moderate and low customer orientation, respectively. In addition, higher

scores represented the participants' higher tendency for conducting customer-oriented behaviours.

Procedure

Due to the COVID-19 pandemic, online sampling was performed instead of referring to Imam Khomeini Hospital, which was one of the main centres providing services for patients with this disease. After obtaining informed consent forms from the nurses, the study questionnaires were sent to them through WhatsApp. The questionnaires were anonymously completed through self-report. In addition, the nurses were required to answer all the questions in order to be able to send the questionnaires. After each questionnaire was sent, the data were stored in the researcher's email.

Statistical analysis

After all, the data were entered into the SPSS software, V.16. At first, normal distribution of the data was assessed using Kolmogorov-Smirnov test. Then, the data were described via frequency distribution tables, central tendency indices (mean and median) and dispersion indices (variance and SD) at 0.05 significance level. Moreover, Pearson's correlation coefficient was used to determine the relationship between patient safety friendly hospital standards as the independent variable and customer orientation as the dependent variable.

RESULTS

Sociodemographic characteristics

In this study, the majority of the nurses were female (90.2%) and had BSc degrees (84.2%). The mean age of the nurses was 38.60±7.94 years, and 58.3% were married. In addition, the mean durations of working as a nurse and working in the present ward were 13.87±7.41 and 6.87±5.80 years, respectively. Besides, 25.6% of the nurses worked in (Intensive care unit ward) and nearly 42.4% worked in rotational shifts. The mean number of patients in each work shift was 10.36±9.91, and 39.5% of the nurses had fewer than five patients in each shift. Moreover, the nurses had to work for 176.05±36.80 hours monthly, and the mean of extra work hours was 71.51±51.21 in the recent 6 months (table 1).

Patient safety friendly hospital standards

From the nurses' perspective, the mean of patient safety friendly hospital standards was 97.35±16.59. The highest and lowest means were related to lifelong learning (23.25±4.19) and leadership and management (20.51±4.26), respectively. The mean scores of safe environment, patient and public involvement, and safe clinical practice were 20.72±4.04, 6.89±1.71 and 25.96±4.92, respectively (tables 2 and 3).

Nurse's customer orientation

The results revealed a high level of customer orientation among nearly half of the nurses (47.7%). The mean score of customer orientation was 16.40±2.62. 8.3% of nurses

Table 1 Demographic characteristics of nurses in Imam Khomeini Hospital Tehran University of Medical Sciences

Variables	Frequency	Per cent
Age (year)		
<31	55	20.7
31–40	108	40.5
41–50	89	3.5
>50	14	5.3
Total	266	100
Mean±SD	38.60±7.94	
Max and Min	23–59	
Gender		
Female	240	90.2
Male	26	9.8
Total	266	100
Marital status		
Single	105	39.5
Married	155	58.3
Other	6	2.2
Total	266	100
Academic degree		
Bachelor science	224	84.2
Master of science	42	15.8
Total	266	100

have a weak level (4–12) and 44% have moderate levels (13–16). The highest mean score was related to the item 'I am always willing to help patients and their companions' (4.27±0.79), while the lowest mean score was related to the item 'I want to consider the points not mentioned by patients or their companions' (3.67±0.95) (table 4).

Relationship between patient safety friendly hospital standards and customer orientation

The study results indicated a significant positive relationship between patient safety friendly hospital standards and all its dimensions and customer orientation ($r=0.445$, $p<0.001$). Accordingly, increase in patient safety friendly hospital standards and its dimensions was accompanied by an increase in the nurses' customer orientation. In this respect, customer orientation showed the highest correlation with lifelong learning ($r=0.444$) and the

Table 2 Hospital compliance with safety-friendly hospital standards from the perspective of nurses

Safety-friendly hospital standards	Frequency	Per cent
Week (27–79)	34	12.8
Moderate (80–107)	164	61.7
Good (108–135)	68	25.6
Total	266	100

lowest correlation with patient and public involvement ($r=0.274$) (table 5).

DISCUSSION

The study results demonstrated that Imam Khomeini Hospital was moderately conformed to the patient safety friendly hospital standards, which was in agreement with the findings of the research titled 'patient safety status in the selected educational hospitals of Mashhad University of Medical Sciences' conducted by Sabouri *et al*. In that study, the conformity of the hospitals to patient safety standards was 67.1% prior to the provision of feedback and 72.72% after.²⁸ Similar results were also obtained by Jabari *et al*,²⁹ Asefzadeh *et al*¹ and Akbari and Moradi.³⁰ The consistency of the results may be associated with the utilisation of similar instruments. However, Shahiri *et al* in Kashan³¹ and Fathi in Kurdistan³² reported weak patient safety in the treatment centres under investigation. The discrepancy among the results may be attributed to the utilisation of different instruments, data collection during the COVID-19 pandemic, and differences in the study populations. Since the achievement of essential standards in all patient safety friendly hospital dimensions is necessary for reaching the lowest level of a patient safety friendly hospital, managers have to set goals while functional and strategic planning in order to gain the maximum scores in the dimensions under investigation.^{28–30} They should also make their best attempts to promote the safety of health services in order for achieving comprehensive, high-quality, patient-oriented healthcare and optimal resources management.³³

This study results showed a moderate level of customer orientation among the nurses, which was consistent with the findings of the studies performed by Alavizadeh *et al*, Kim *et al* and Allahyari *et al*.^{15 16 25} Provision of nurses with high-quality services can result in the incidence of customer-oriented and patient-oriented behaviours. Although customer orientation was close to the good status in this study, it was still far from the ideal status. Mohabbati *et al* disclosed that policy-makers could improve nurses' customer orientation by promoting their skills for solving patients' complaints, focusing on patients and their demands, and providing them with appropriate educational facilities.³⁴ Considering the impact of staff on each organisation's functions, steps should be taken towards promoting their appropriate behaviours. Nonetheless, due to the differences in staff's motivational factors as well as the differences in motivational patterns in various communities with varying cultures, selection of effective models is vitally important.³⁵ Organisational customer orientation behaviours refer to a set of beliefs that consider customers as the top priority, eventually leading to long-term profits.³⁶ At the individual level, these behaviours have been defined as staff's tendency to conduct behaviours for attracting clients.³⁷ By these behaviours, employees build a mutual relationship with customers, which in turn results in the improvement of

Table 3 Numerical indicators of meeting the dimensions of patient safety friendly hospital standards from the perspective of nurses

Safety-friendly hospital standards and its dimension	Mean	SD	Min	Max	Based on likert scale			
					Mean	SD	Min	Max
Hospital safety friendly patient standards (27–135)	97.35	16.59	31	135	3.58	0.62	1.13	5
Safe clinical services (7–35)	25.96	4.92	7	35	3.71	0.70	1	5
continuous education (6–30)	23.25	4.19	6	30	3.87	0.69	1	5
Safe environment (6–30)	20.72	4.04	6	30	3.45	0.67	1.67	5
Sovereignty and leadership (6–30)	20.51	4.62	6	30	3.41	0.71	1	5
Involve participation and interaction with the patient and the community (2–10)	6.89	1.71	2	10	3.44	0.85	1	5

organisational function.³⁶ This has been mentioned as one of the main policies of pioneer centres.³⁸ Although such factors as the importance of customers in organisational culture and organisational justice can play a critical role in the performance of customer orientation behaviours, these behaviours mainly result from individuals' perceptions of their jobs.²⁷ Hence, each organisation's success can be determined based on the individuals selected for carrying out important tasks. Nurses comprise the largest and most active group in the health system who provide clients in different healthcare centres with comprehensive health services using their knowledge and skills. Thus, determination of nurses' patient orientation and customer orientation can provide the ground for health policymakers to strengthen their motivation via accurate planning, appropriate resources allocation and optimal utilisation of organisation's facilities and to eliminate their shortcomings by training those regarding effective relationships with patients. This can in turn result in the achievement of positive organisational outcomes including high-quality performance, increased customer satisfaction, increased organisational efficiency, profitability and other organisational revenues.³⁴

This study findings revealed a significant positive correlation between patient safety friendly hospital standards and all its dimensions and customer orientation.

Accordingly, the higher the patient safety friendly hospital standards, the higher the nurses' customer orientation would be. Similar results were also obtained by Latifi *et al.*³⁹ They emphasised the importance of high-quality healthcare services and clients' satisfaction in superior health systems. However, Iran's health system is not at a proper level in this regard due to major problems and failures. In order for this system to be successful, coherent organisational structures should be implemented and technically capable staff should be employed. In this context, it is necessary to review the existing processes, train and strengthen the human resources, train the staff regarding the principles of working in the health system with emphasis on customer orientation and customer satisfaction, notify the staff regarding the organisation's expectations and supporting the staff for meeting the expectations.^{29 39}

In the current research, the highest correlation was observed between lifelong learning and customer orientation. Lifelong learning is the most important type of experimental learning and among the methods used for optimisation of human resources, in which employees are promoted and programmes can be executed.⁴⁰ As a principle as well as a necessity, lifelong learning requires the most effective execution methods to enhance nurses' clinical skills and improve service provision for patients.⁴¹

Table 4 Frequency distribution and numerical indicators of nurses' customer orientation by items

Items	Very low		Low		Medium		High		Very high		Mean	SD
	N	%	N	%	N	%	N	%	N	%		
I am always willing to help patients and their companions.	2	0.8	6	2.3	28	10.5	112	42.1	118	44.4	4.27	0.79
I want to make patients happy when their mood is low.	2	0.8	7	1.5	33	12.4	117	44	110	41.4	4.24	0.78
I want to resolve patients' complaints.	2	0.8	3	1.1	25	9.4	139	52.3	97	36.5	4.23	0.72
I want to consider cases that patients or their companions have not requested.	6	2.3	22	8.3	76	28.6	111	41.7	51	19.2	3.67	0.95

**Table 5** Correlation between meeting the dimensions of patient safety friendly hospital standards with nurses' customer orientation

Customer orientation Dimensions of patient safety friendly hospital standards	r	P value
Involve participation and interaction with the patient and the community	0.274	<0.001
Sovereignty and leadership	0.299	<0.001
Safe environment	0.415	<0.001
Safe clinical services	0.425	<0.001
continuous education	0.444	<0.001
Hospital safety friendly patient standards	0.445	<0.001

In fact, lifelong learning is an inseparable component of a health system's activities, which refers to the activities performed by health team members for maintenance, development or promotion of their knowledge, professional function and relationships while providing services for patients or the society.⁴⁰ Lifelong training, retraining, continuous training and updating the knowledge of health staff aim at responding to their educational needs and improving their scientific level on the basis of society's changes. Hence, the first step for meeting the goals of lifelong learning is determining the staff's educational needs. Considering the goals of lifelong learning programmes, in order to improve nurses' patient orientation and customer orientation and provide appropriate services, managers of healthcare centres are recommended to make use of multicriteria decision making and to consider continuous educational programmes based on needs assessment for planning, resources allocation and prioritisation, particularly during the COVID-19 pandemic.¹⁵ They are also suggested to provide the ground for nurses' customer orientation and patient orientation, because patients and their families need a health system to provide them with high-quality care services.

CONCLUSION

From the nurses' viewpoint, patient safety friendly hospital standards were at a moderate level during the COVID-19 pandemic. In addition, less than half of the nurses reported a high level of customer orientation, and this index was also at a moderate level. Furthermore, the results indicated a significant positive relationship between patient safety friendly hospital standards and all its dimensions and customer orientation. In other words, increase in patient safety friendly hospital standards was accompanied by an increase in the nurses' customer orientation. These findings can help the organisations providing healthcare services to adapt with patient safety friendly hospital standards and internalise customer orientation in nurses via management based on multicriteria decision making. In this way, patient orientation, as an important WHO's target, is fulfilled and high-quality, safe, timely, efficient, fair, cost-effective and patient-oriented services are provided by all staff of the health system. In fact, similar to nurses, physicians, midwives,

paramedics, secretaries, security staff and service staff are in direct or indirect contact with clients. Consequently, they have to be trained and empowered in terms of patient safety friendly hospital standards and patient orientation/customer orientation.

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Competing interests None declared.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

Patient consent for publication Consent obtained directly from patient(s)

Ethics approval This study was approved by the joint Organisational Ethics Committee of School of Nursing and Midwifery and School of Rehabilitation affiliated to Tehran University of Medical Sciences (IR.TUMS.FNM.REC.1399.084). During the research process, the university's ethical policies were observed in accordance with the principles of the Declaration of Helsinki, including obtaining informed consent to participate in the research. Participants gave informed consent to participate in the study before taking part.

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