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Evaluation of Patients' Satisfaction with Food and Nutrition Service in Selected Hospitals Affiliated to Yazd Shahid Sadoughi University of Medical Sciences in 2016-2017

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ABSTRACT

Background: Food and nutrition services in hospitals are one of the factors effecting patients' satisfaction. Appropriate management and supervision in the nutrition sector is an essential factor in reducing the costs and gaining patient satisfaction. The optimal performance of the nutrition sector accelerates improvement and can be useful in their satisfaction. The purpose of this study was to evaluate patients' satisfaction with food and nutrition services in 2016-2017, Yazd, Iran. **Methods:** This was a descriptive cross-sectional study. The study population included patients referring to the selected hospitals affiliated to Yazd Shahid Sadoughi University of Medical Sciences. A researcher-made questionnaire was used for data collection. This questionnaire had 19 questions that should be answered on a 5-point Likert scale (strongly agree, agree, no idea, disagree, and strongly disagree). At the end of this questionnaire, a question was presented about the individual's overall satisfaction with nutrition. **Results:** The average of patients' satisfaction with food services was 4.40 ± 0.90. The lowest satisfaction rate was related to the inappropriate quality of dinner with an average of 4.02 ± 1.50. The highest level of satisfaction was related to the hygiene of food with an average of 4.69 ± 0.55. **Conclusion:** Hospital managers are required to take measures to increase the awareness of nutrition service personnel regarding the health and quality of food, their active presence by patients' beds, give patients the right to choose, and take the necessary supervision to increase the variety of meals.

Keywords: *Patient satisfaction; Hospital; Nutrition services*

Introduction

Malnutrition is one of the common problems in hospitalized patients. Based on the available information, 44% and two thirds of patients had malnutrition at the time of admission and during hospitalization in a hospital, respectively (McWhirter and Pennington, 1994).

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Malnutrition can increase the length of hospitalization and is effective in the progression of the main disease; The hospital managers are required to control malnutrition among the patients through proper dietary program Since malnutrition in hospitals increases the mortality of patients (Hosseinpour-Niazi *et al.*, 2012), proper nutrition can have a significant impact on the reduction of mortality in patients. Patients' satisfaction with health care should be assessed to improve the quality of hospital services. One of the hospital factors affecting patients' satisfaction is food service (Ansari *et al.*, 2004). Appropriate nutrition plays a significant role in the health and treatment of individuals and is a part of treatment care (Ohlsson, 2004). Nutrition and food services are among the main issues that can play an important role in each hospital's function (Tranter *et al.*, 2008).

The hospital nutrition department is one of the most important units in a hospital. The nutrition department does not only pay attention to foods, but also provides and prepares suitable food services for patients. However, most hospital managers do not consider the nutrition department (Ebrahimpour *et al.*, 2015). Moreover, research shows that the nutrition department, as one of the patients' health pillars in hospitals, has been ignored or played a low role in the treatment process (Gholizadeh *et al.*, 2013).

In this regard paying more attention to the nutrition department and forming an important part of hoteling services by hospital mangers lead to increased quality of cooking and provide the patients with better food. Higher quality of these services increases the patients' satisfaction consequently (Eliss and Hartly, 2001).

In the field of nutrition, providing appropriate services decreases the hospitalization length and shortens the recovery period through facilitating the treatment process, which may lead to significant economic saving for the hospital (Eliss and Hartly, 2001). Furthermore, in a study, the managers' attention to the quality of nutrition department services reduced hospital costs (Mosadeghrad, 2004). Therefore, appropriate management and supervision on the nutrition department is an important factor in reducing the costs and obtaining the satisfaction of patients (Somanchi *et al.*, 2011).

Studies revealed that in most hospitals, the food service quality as well as the patients' dissatisfaction are common problems (Amany M *et al.*, 2012, Sahin *et al.*, 2006, Wong *et al.*, 2011). Kavousi et al concluded that hospitals do not pay enough attention to the nutrition department and do not have appropriate supervision on the supply and distribution of food hygiene; consequently, lack of adequate supervision reduced the quality of food, increased costs, and reduced the patients' satisfaction (Kavousi *et al.*, 2012). Tranter believes that the duration of patient's stay in the hospital was influenced by the quality of food assessment. According to his findings, the patients with longer hospitalization periods were more satisfied with the quality of food. Moreover the behavior of food distribution personnel had a significant effect on the satisfaction of patients (Tranter *et al.*, 2008). In another study, Masoudi stated that only 30% of patients had high satisfaction with the quality of provided food. He stated that 91% of patients were dissatisfied with not considering their interests and tastes. Given that this study was conducted in the Southeast Educational Hospital of the country, it can be stated that educational hospitals should pay more attention to food hygiene and observe health tips related to food distribution (Masoudi, 2006).

However, Nasiri et al. reported that 83.5 percent of patients were satisfied with food services since they could choose their favorite foods (Nasiri, 2008). The data collection tool in this study was a previously administered questionnaire with confirmed validity and reliability. This questionnaire has 22 closed questions about the four sub-objectives of satisfaction with quantity, quality of food, service, and food preference.

According to the study by Amany et al. 78.8% of patients were satisfied with the quality of food services. He stated that the food taste, food temperature, food providers' attitude, as well as internal discomfort of patients in the hospital affected their satisfaction with food services, so

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that about 90% of patients were not satisfied with the lack of place for keeping food (Amany M *et al.*, 2012).

According to the above-mentioned ideas, the nutrition department is among the most important hospital wards. The optimal performance of this department, especially in the field of therapeutic regimens, in addition to accelerating patients' improvement, can be highly effective in improving their satisfaction. Therefore, this study was aimed at to evaluating patients' satisfaction with food and nutrition service in selected hospitals affiliated to Yazd Shahid Sadoughi University of Medical Sciences.

Materials and Methods

Design and participants: This was a descriptive cross-sectional study carried out to evaluate patients' satisfaction with food and nutrition services in selected wards' of hospitals affiliated to Yazd Shahid Sadoughi University of Medical Sciences in 2016-2017. Shahid Sadoughi, Shahid Rahnemoun, Afshar, Ardakan Ziaei, and Mehriz Fatemeh Al-Zahra hospitals were selected. The reason for choosing these hospitals was their high volume of clients. In this study, hospitalized patients were considered as the statistical population. Clustered and stratified sampling was conducted. The number of statistical samples was calculated according to the Cochran formula with an error level of 2 to 5% for each hospital. The total sample size was less than 1900. Moreover, the response rate of patients was 80%.

Inclusion criteria were all hospitalized patients with a minimum stay of 24 hours. Patients who were not willing to participate in the present study were excluded. The questionnaire was completed the time of discharge. In order to conduct the study, necessary licenses were obtained from the authorities.

Measurements: A researcher-made questionnaire was administered for data collection. After confirming the validity and reliability of the education, the questionnaire was completed. In order to check the validity of the questionnaire, the opinions of experts in organizational development management and administrative transformation, deputy director of treatment, and professors of Shahid Sadoughi University of Medical Sciences and Health Services in Yazd were used. It is worth noting that Cronbach's alpha was 96% for this questionnaire.

This questionnaire has 19 questions that should be responded using a five-point Likert scale (strongly agree, agree, no comments, disagree, and strongly disagree). Moreover, at the end of this questionnaire, a question was posed asking the patients' overall satisfaction with food and nutritional services. Questionnaire was scored from 1 to 5.

Ethical considerations: In dealing with patients, we tried to fully adhere to moral points. Furthermore, all patients were explained that the collected information is completely confidential and they participated in the study with a conscious satisfaction. The study was approved by the ethics code of IR.SSU.REC.1396.106 at Yazd Shahid Sadoughi University of Medical Sciences.

Data analysis: The data were analyzed by SPSS software version 21 (SPSS Inc., Chicago, IL, USA) and the data were presented using frequency distribution tables and mean with a significance level of 0.05.

Results

In this study, 1527 hospitalized patients participated, which included 44.9% males and 53.1% females; 72.8% were married and 12.7% were single. The majority of patients ranged from 21 to 40 years old (35.8%) and 27.2% of them were illiterate, while 22.1% had elementary education. Moreover, 44.5% of the patients were house keepers. Most participants were from Afshar Hospital (24.6%). Majority of the patients were hospitalized in obstetrics and gynecology wards (16.1%), heart (14.9%), general surgery (14.1%), and internal (13.8%), respectively.

According to the results of **Table 2**, the average patient satisfaction was 4.40 ± 0.90 with food and nutrition services. The lowest satisfaction rate was related to the inappropriate quality of dinner with an average of 4.02 ± 1.50. The highest level of satisfaction was about the hygiene of food with an

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average of 4.69 ± 0.55. Based on the independent t-test and one-way analysis of variance (ANOVA), satisfaction with food and nutrition services had a significant relationship with the participants' gender, age, marital status, education level, and job (**Table 3**).

Table 1. Demographic characteristics of hospitalized patients

Variables	N	%	Variables	N	%
Jobs			Age (y)		
Student	117	8.3	< 20	169	11.5
Housewife	679	48.2	20-40	546	37.3
Retired	143	10.2	40-60	397	27.2
Unemployed	54	3.8	60-80	304	20.8
Public employment	72	5.2	80 <	47	3.2
Private working	152	10.7	Gender		
Temporary job	35	2.4	Male	685	45.7
Worker	157	11.2	Female	811	54.3
Wards			Marital Status		
Orthopedic	138	9.2	Married	1111	79.9
Children	103	6.9	Single	194	14.0
Urology	25	1.9	Divorced	8	0.6
General surgery	215	14.5	Dead Spouse	77	5.5
Neurosurgery	56	3.7	Education levels		
Eye	30	2.0	Illiterate	415	28.9
Internal	210	14.1	Elementary	337	23.5
CCU	157	10.5	Guidance	194	13.5
Obstetrics & Gynecology	246	16.5	Diploma	290	20.2
Infectious	46	3.0	Academic	200	13.9
Heart	228	15.3	Hospitals		
Neurology	24	1.6	Afshar	376	24.6
ENT	49	3.2	Shahid Rahnamun	199	13.1
			Shahid Sadoughi	342	22.3
			Ardakan Ziaee	253	16.6
			Mehriz Fatemeh Al-Zahra	357	23.4

Discussion

The patients' satisfaction mean scores showed their high level of satisfaction with food and nutrition services. In a study by Nemati et al. conducted to assess the satisfaction rate of patients hospitalized in one of the educational hospitals in Tehran, the results showed that 50% of patients were satisfied with the quality of nutritional services. In this regard, patients' satisfaction was at a low level (Nemati *et al.*, 2015), which do not match our results.

In the present study, patients' satisfaction with the quality of dinner was assessed at a lower level. This usually lower level of satisfaction may be due to the fact that dinner is usually served as ready and small meals with a focus on the patients' diet. Zolhavarieh et al. also conducted a study to assess the satisfaction of patients hospitalized in the urology ward of Shahid Beheshti Hospital of Hamadan University of Medical Sciences. As they noted, patients' satisfaction with food quality was reported as 73.7% and lower (Zolhavarieh *et al.*, 2019), complying with the results of the present study. It was assessed the satisfaction of hospitalized patients and factors influencing it in a subspecialty hospital in Tehran. According to their findings, patients' satisfaction with diet quality and observance was reported 69.8% (Gholami fesharaki *et al.*, 2016), which is in the

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same line with our findings. Zolhavarieh et al. also carried out a study over patients' satisfaction in the urology ward of Shahid Beheshti Hospital of Hamadan University of Medical Sciences in the first and second half of 2013. They pointed to the low quality of the patients' viewpoint (Zolhavarieh *et al.*, 2017), complying with the results of the present study. Moreover, in a study by Kazemi, patients were dissatisfied with the quality of food in Mashhad Public Hospital (Kazemi, 2009), which matches our findings.

In the present study, patients' satisfaction with food distribution personnel was at a high level. Bas evaluated food hygiene in Turkey and concluded that only 9.6% of the food distribution personnel used gloves and 47.8% were not trained about food hygiene (Baş *et al.*, 2006), which was not in the same line with the results the present study. Gholizadeh et al. evaluated the patients' satisfaction with nutritional services in educational hospitals in Tabriz and found that patients were satisfied with the health principles of food distribution personnel and their attitude and behavior at a low level (Gholizadeh *et al.*, 2013), which contradicts the results of the present study. In a systematic review, It was assessed the patients' satisfaction in 52 Iranian articles and concluded that patients' satisfaction with nutritional services was 83.42% showing a high level (Esfahani and Nezamdust, 2019). This finding is consistent with the results of the present study.

Table 2. Mean and standard deviation of the components associated with patients ' satisfaction from food and nutrition services

Components	Mean ± SD
The breakfast distribution time was appropriate.	4.44 ± 1.42
The diversity of foods intended for breakfast was appropriate.	4.39 ± 0.86
The amount of breakfast food was appropriate.	4.48 ± 0.74
The quality of breakfast was appropriate.	4.46 ± 0.73
The time of the lunch distribution was appropriate.	4.39 ± 0.83
The diversity of foods intended for lunch was appropriate.	4.43 ± 0.76
The amount of food lunch was appropriate.	4.38 ± 0.82
Lunch quality was appropriate.	4.26 ± 1.06
The dinner distribution time was appropriate	4.28 ± 1.17
The diversity of foods intended for dinner was appropriate.	4.48 ± 0.70
The amount of food was suitable for dinner.	4.43 ± 0.78
The quality of dinner was appropriate.	4.02 ± 1.50
Your taste was considered breakfast, lunch, and dinner.	4.08 ± 1.22
The dishes used for serving food were hygienic and appropriate.	4.43 ± 0.80
The manner and time of tea distribution and boiling water were appropriate.	4.33 ± 0.93
Quality of bread was suitable in the hospital.	4.50 ± 0.86
The method of dealing with food distribution personnel was appropriate.	4.53 ± 0.68
The gathering of containers after food distribution was appropriate.	4.52 ± 0.70
Observing the health principles (having white and clean robes, disposable gloves, hats, etc.) was appropriate by food distribution personnel.	4.69 ± 0.55

The results of the present study and other studies indicate the importance of paying attention to patients' preferences. In order to promote the quality of health care, the patients' needs and preferences should be considered at priority. Hence, the patients' preferences regarding food services should be determined (van Empel *et al.*, 2011).

Service provision in hospitals includes a tendency towards the values that are important for patients, leading to quality improvement. Consequently, paying attention to the preferences of patients is not only ethical, but also results in the improvement of care and access to caring methods. This is especially important in the case of the patients, whose

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needs and preferences are different from other patients (Dwight-Johnson *et al.*, 2004). In the same regard, paying attention to customers' needs in hospitals and organizations of health services is important. To this end, consumers' satisfaction of hospital services should be improved, which increases the hospital's income consequently. Moreover, the required services should be recognized during time, so that hospital managers can focus their efforts on resolving the relevant forms of these services (Yaghoubi *et al.*, 2011).

Table 3. Comparison mean (±SD) patients' satisfaction scores in term of some patients' characteristics

Variables	Mean ± SD	P-value
Age (y)		
< 20	4.23 ± 0.56	< 0.001[a]
20-40	4.38 ± 0.51	
40-60	4.47 ± 0.52	
60-80	4.42 ± 0.52	
80 <	4.44 ± 0.59	
Gender		
Male	4.34 ± 0.52	< 0.001[b]
Female	4.45 ± 0.52	
Marital Status		
Married	4.41 ± 0.52	< 0.001[a]
Single	4.25 ± 0.56	
Divorced	4.36 ± 0.77	
Dead spouse	4.44 ± 0.56	
Education levels		
Illiterate	4.51 ± 0.50	< 0.001[a]
Elementary	4.44 ± 0.49	
Guidance	4.29 ± 0.56	
Diploma	4.29 ± 0.52	
Graduate	4.40 ± 0.51	
Bachelor	4.27 ± 0.49	
Masters	4.45 ± 0.59	
Job		
Student	4.24 ± 0.50	< 0.001[a]
Housewife	4.48 ± 0.50	
Retired	4.25 ± 0.50	
Unemployed	4.37 ± 0.61	
Public employment	4.39 ± 0.53	
Private working	4.40 ± 0.59	
Temporary job	4.19 ± 0.49	
Worker	4.45 ± 0.48	

[a]: Independent t-test; [b]: One-way analysis of variance

Therefore, changing the approach of organizational management requires preference management since the clients are considered as the main element in any system and are of great importance to provide what is desirable. Managers of medical centers compete with other centers to keep and attract more visitors; so, they are required to consider their preferences in their strategic plans. One of the limitations of the present study was that only patients in inpatient wards were studied and outpatients were not included. Another limitation was the existence of many individuals and cultural differences among the studied participants.

Conclusion

Although patients' satisfaction with food and nutrition services was high in the studied hospitals, patients were still dissatisfied with some services. The dissatisfaction of patients with the inappropriate quality of dinner due to lack of variety in meals should be considered by hospital managers. Hospital managers need to take measures to increase the knowledge of nutritional services' personnel concerning the health and quality of food, their active presence in clinical patients. They are also recommended to give patients the right to choose their food and provide the necessary supervision to increase the diversity of meals.

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Conflict of Interest

There is no any conflict of interests reported by the authors.

Authors' contributions

Vafaeenasab M and Motealehi A were involved in designing and supervising the study. Bahariniya S was involved in data collecting,

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data analyzing, and writing the manuscript. Raadabadi M and Safari M were involved in data analyses and participated in writing the manuscript. All authors critically reviewed the manuscript and approved the final version submitted for publication.

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