



Evaluation of Patients' Satisfaction Level with Food and Food Services in King Fahad Military Medical Complex (KFMMC) Hospital – Dhahran, Saudi Arabia: Improving Outcome



Malikah Al Shemmery^a, Abdullah Hakami^b, Ahmed Alfaraidy^c, Saud Hakami^d, Alanoud Al Buainain^e, Alhanouf Al Nafisah^f, Abdulhadi Al Zahrani^g, Eman Al Hoaimal^h

Manuscript submitted: 27 June 2024, Manuscript revised: 09 August 2024, Accepted for publication: 18 Sept 2024

Corresponding Author^a



Keywords

patient satisfaction;
patients' perception;
hospital food satisfaction;
quality hospital food
services;

Abstract

Background: Hospital foods are an integral aspect of comprehensive care given to hospitalized patients, to facilitate their recovery along with to improve their health outcomes. It is the commitment of every hospital to ensure delivering the highest standard of care for its patients, including hospital meals. Patient satisfaction with hospital food services is an important quality indicator, reflecting the overall hospital healthcare standard going in parallel to the quality of other hospital medical services. **Objective:** 1) To evaluate the admitted patients' satisfaction level regarding the food and food services provided to them at King Fahad Military Medical Complex (KFMMC) – Dhahran, Saudi Arabia. 2) To plan and recommend further changes to improve patient food service satisfaction to administration based on survey results. **Study design:** we surveyed KFMMC Hospital, which is known as a busy tertiary care hospital with a capacity of more than 300 beds. Participants were informed about the questionnaire used to measure their satisfaction with food and food services. The data was collected between the periods of May 2024 to 31 August 2024. The questionnaire questions that we used for measuring patient satisfaction with food and food services are valid and reliable eight questions on different aspects of food services, where many previous studies made use of this valid and sound questionnaire, which was adapted from Sahin, B. et al 2006. Patients were informed clearly about the aim and voluntary nature of involvement before filling out the questionnaire. The approximate sample size was 400 patients. **Results:** The question responses revealed that the majority of patients were satisfied with most of the different aspects related to food and food services, except the temperature of food, which was rated lower than other aspects of food services. Keeping meals at the right temperature was one of the challenges that had been faced by the hospital food services which is requiring improvement. **Conclusion:** Surveys utilizing patients' perceptions of overall food service are valuable approaches for evaluating the quality of food services provided by hospitals. These results can be adopted by hospital food services administration to suit their needs in (1) improving the food service quality and practicing it cost-effectively, (2) establishing quality indicators for continuing improvement of areas that require modification and solutions, (3) designing guidelines to address the hospital meals-related issues and to assess the quality of food services progression regularly.

^a Department of Food Services, King Fahad Medical Military Complex (KFMMC), Dhahran, Eastern Province, Saudi Arabia

^b Department of Food Services, King Fahad Medical Military Complex (KFMMC), Dhahran, Eastern Province, Saudi Arabia

^c Department of Patients Services Administration-Patient Affairs, King Fahad Medical Military Complex (KFMMC), Dhahran, Eastern Province, Saudi Arabia

^d Department of Patients Services Administration-Patient Affairs, King Fahad Medical Military Complex (KFMMC), Dhahran, Eastern Province, Saudi Arabia

^e Department of Food Services, King Fahad Medical Military Complex (KFMMC), Dhahran, Eastern Province, Saudi Arabia

^f Department of Food Services, King Fahad Medical Military Complex (KFMMC), Dhahran, Eastern Province, Saudi Arabia

^g Department of Food Services, King Fahad Medical Military Complex (KFMMC), Dhahran, Eastern Province, Saudi Arabia

^h Department of Clinical Nutrition, King Fahad Medical Military Complex (KFMMC), Dhahran, Eastern Province, Saudi Arabia

International Journal of Health Sciences © 2024.
 This is an open access article under the CC BY-NC-ND license
 (<https://creativecommons.org/licenses/by-nc-nd/4.0/>).

Contents

Abstract.....	281
1 Introduction.....	282
2 Materials and Methods.....	283
3 Results and Discussions.....	283
3.1 Results	283
3.2 Discussions	283
4 Conclusion	284
Acknowledgments.....	285
References	286
Biography of Authors	287

1 Introduction

Hospital foods are an integral aspect of comprehensive care given to hospitalized patients, to facilitate their recovery along with to improve their health outcomes. Every hospital must provide the highest level of care for their patients, including hospital meals. Patient satisfaction with hospital food services is an important quality indicator that reflects on the overall hospital healthcare standard going in parallel to the quality of other hospital medical services (Sadaf et al., 2018). For this reason, it is important to emphasize the quality of the hospital meals provided to the admitted patients. The chief concern of any healthcare food service program is the quality of its meals which contributes as well to the patient's overall satisfaction experiences. We carried out a satisfaction survey at King Fahad Medical Military Complex (KFMMC), Saudi Arabia to determine based on the patient perception the aspects that may be affecting the overall satisfaction level on the quality of hospital food services (Agarwal et al., 2013). Use the results to address any food and food services-related challenges and to regularly identify ways to improve the quality of hospital meals, but more than that, to improve patient outcomes.

2 Materials and Methods

This quality improvement survey was carried out between May 2024 to 31 August 2024 in (KFMMC)-Dhahran consisting of a total of more than 300 beds. The main criteria for the sample selection are the capability of the patients to evaluate the quality of food and food service. For this reason, inpatients who were unable to fill out the questionnaire or were not willing to participate in the survey were excluded. After meeting the selection criteria, the patients were made aware of the study's purposes and the voluntary nature of their participation. Their confidentiality of response data was confirmed. The structured questionnaire was in Arabic language and included: A) The participant's sociodemographic information, including gender, age, and admitted ward. B) The level of patient satisfaction with food and food services variables (Sahin et al., 2006). We used eight questions in the form of checklists which required 4-5 minutes to complete. The data collectors' team who approached the selected participant was from the food service. They handled the distribution of the questionnaire, obtained the patient's responses by face-to-face interviews, and checked the checklist data collection for completeness. The participants were informed on how to give their opinion to assess the quality satisfaction for the 8 items of food service in the questionnaire through selected (yes, no, or uncertain). The data was collected and analyzed by summarizing the socio-demographic characteristics of the participants and their satisfaction with the overall quality of food and food services.

3 Results and Discussions

3.1 Results

A total number (N=400) of patients were recruited for the survey, and of them 53.8 % were females and 46.3 % were males. The majority of patients were between the ages of 31 and 50, and 27.7 % of their age was less than 65 years. Table 1. illustrates the general characteristics of the participant sample. 38.25 % of patients participated from the medical wards and 12.75 % from the cardiology ward at the time of this survey conducted. Table 2. demonstrates the results of the satisfaction response given by the patients on different elements of foods and food staff services. The participants expressed a greater satisfaction with a variety of foods at 74.3%. The satisfaction rates with the taste and appearance of the food were 72% and 64% respectively. The cleanliness of utensils scored 56.3% of satisfaction. In terms of level of satisfaction with food service staff, 82.8% of the participants gave the staff serving the foods a strong recommendation on their attitude and behaviors and 81.3% of patients were also satisfied with staff hygienic practices. However, a negative relationship between satisfaction rate and warmth of foods has been noted. The majority of 57% of patients were dissatisfied with the temperature of their meals. Of note, there was 3% to 17% of participants were uncertain about the overall satisfaction level with food and food services.

Table 1
General characteristics of the participant sample

Variables	Frequency (N=400)	Percentage %
<i>Age</i>		
18–30	55	13.8 %
31–50	200	50 %
51–65	111	27.7 %
> 66	34	8.5 %
<i>Wards</i>		
Gynecology and obstetric	128	32 %
Cardiology	51	12.75 %
Surgical	68	17 %
Medical	153	38.25 %

Table 2
The patient's views on overall satisfaction with hospital foods and food services

Variables	Yes / %	No / %	Uncertain / %
Are you satisfied with the taste of the food served?	291 (72%)	88 (22%)	21 (5%)
Are you satisfied with the appearance of the food served?	259 (64%)	114 (28%)	27 (6%)
Are you satisfied with the temperature of the food?	118 (29.5%)	231 (57%)	51 (12%)
Are you satisfied with the time of food distribution?	174 (43.5%)	192 (48%)	34 (8.5%)
Are you satisfied with the variety of food items?	297 (4.3%)	91 (22%)	12 (3%)
Are you satisfied with the availability and cleanliness of utensils?	225 (56.3%)	106 (26%)	69 (17%)
Are you satisfied with the attitude and behaviors of the staff serving food?	331 (82.8%)	15 (3.8%)	54 (13%)
Did the staff who deliver your meals are neat and clean?	325 (81.3%)	55 (13%)	20 (5%)

3.2 Discussion

To further improve patient care, hospitals should regularly assess and refine their food services based on their patient feedback. This involves providing both quality of the food and the efficiency of the service to the hospital patients as it is a crucial element to comprehensive patient care. Equally important is patient

satisfaction with these services, ensuring that nutritional needs are met and that patients are satisfied with their dining experience (Boudreaux & O'Hea, 2004; Lemos et al., 2009). Continuous improvement in these areas contributes to better overall health outcomes and enhances the hospital's reputation for delivering high-quality care. Upon admission, nearly 50% of patients are already undernourished, and many others may develop malnutrition during their hospital stay (Sahin et al., 2006). Malnutrition exacerbates illness, increases mortality, and contributes to higher costs and re-admission rates (Abdelhafez et al., 2012). Given the prevalence of hospital-related malnutrition and the rising number of patients with chronic diseases, hospitals must improve their nutritional care quality. Understanding the status of food and nutrition services is essential for delivering high-quality care. This assessment allows for future comparisons and evaluates the effectiveness of changes, which is crucial for effective action planning. Meal delivery equipment and products can help improve patient satisfaction and contribute to hospital food service best practices (Lai & Gemming, 2021; Hartwell et al., 2007). Thus, our survey aimed to assess the in-patient hospital meals related to the satisfaction rate perceived by participants on different aspects of hospital food and food services in KFMMC hospitals, in Saudi Arabia. We found that the higher percentage of patient satisfaction was with staff interaction, attitude, and behavior. Our results were in line with the findings reported by (Sahin et al., 2006; Tranter et al., 2009). Additionally, the patient's satisfaction rates of 72 % and 74.3%, were in the taste of foods and their variety, respectively. This finding was compatible with the results of Sahin et al. (2006), who reported that about half of the patients were satisfied with the taste of foods, while 66.6% of participants were satisfied with the food variability that was offered at military hospitals in Turkey. When the views of the patients on times of food distribution were considered. We found that 48% of the participants were dissatisfied with the distribution times of their meals and snacks according to set schedules. Moreover, the distribution time of food and its impacts on patients' satisfaction with hospital food service were reported in the previous studies. However, our findings are contrary to earlier reports by Sahin et al. (2006); Abdelhafez et al. (2012); Shirin et al. (2021), where they found that patients were more satisfied with the time of meal distributions. However, similar to Naithani et al. (2008), who found that 35% of studied patients were not satisfied by the food distribution time. As a solution, we suggested that the mealtimes distribution should be rearranged to match the patient's needs and status rather than to be fixed and determined by the hospital staff. Perhaps, the meal schedule modification will provide a suitable environment for patients to consume their meals and improve their satisfaction level. In regards to the positive impact of psychological support that the patients feel from the dietary staff who serve them a meal on the satisfaction level with hospital food services. A previous study by Watters et al. (2003), reported that personal contact with staff is beneficial because patients perceive emotional support. It has been previously reported that the temperature of food is an important determinant of patient satisfaction with food and food service (Abdelhafez et al., 2012). We found that 57% of participants expressed a higher dissatisfaction rate with the temperature of the meal. In line with our result, a previous finding by Abdelhafez et al. (2012) and Sadaf et al. (2018), found that increasing the level of satisfaction with the temperature of foods decreases the level of dissatisfaction. While, another study by Sahin et al., and Tranter et al., did not find such an association. Through our quality improvement survey results, we discovered that such a survey is a beneficial tool to measure the quality of hospital food services and address the concern issue with the temperature of food that requires a solution and correction plan. Improving the temperature of hospital meals for patients can involve several strategies. We are suggesting that using a re-thermalization system and reducing the time between meal preparation and delivery to the patient's room are alternate ways to keep meals at a desirable temperature before it's given to the patient. Also, implementing a system for patients to provide feedback on meal temperature for continuous improvement (Al-Arifi, 2012; Matiti & Trorey, 2004).

We believe that our results will provide insight into how important to conduct quality improvement surveys aiming to meet the patient expectations and satisfaction levels. We also hope to establish a guideline in hospital food services to maintain the quality of the food services regularly.

4 Conclusion

To the best of our knowledge, this is the first quality improvement survey that has been conducted in a Military hospital in Saudi Arabia. The result suggested that the perception of patients on the quality and

satisfaction of food and food services is important and measurable as well. Incorporating continuous evaluation and adjustment of patient feedback across all food services categories into our Quality Improvement Survey will ensure that the food services will positively and consistently meet patient expectations and enhance overall satisfaction. Our findings showed that an effort must be applied to improve the unsatisfactory aspect of food temperatures. For that regular updates to the quality improvement plan will be communicated to the food services staff to maintain a high standard of care. Thus, food service departments in the hospitals will keep providing food meals at higher standards by implementing such types of quality surveys periodically time as well as establishing departmental food service guidelines to serve patients with satisfied quality food and food service highly recommended.






Acknowledgments




We are grateful to two anonymous reviewers for their valuable comments on the earlier version of this paper.

References

- Abdelhafez, A. M., Al Qurashi, L., Al Ziyadi, R., Kuwair, A., Shobki, M., & n Mograbi, H. (2012). Analysis of factors affecting the satisfaction levels of patients toward food services at general hospitals in Makkah, Saudi Arabia. *American journal of medicine and medical sciences*, 2(6), 31-50.
- Agarwal, E., Ferguson, M., Banks, M., Batterham, M., Bauer, J., Capra, S., & Isenring, E. (2013). Malnutrition and poor food intake are associated with prolonged hospital stay, frequent readmissions, and greater in-hospital mortality: results from the Nutrition Care Day Survey 2010. *Clinical nutrition*, 32(5), 737-745. <https://doi.org/10.1016/j.clnu.2012.11.021>
- Al-Arifi, M. N. (2012). Patients' perception, views and satisfaction with pharmacists' role as health care provider in community pharmacy setting at Riyadh, Saudi Arabia. *Saudi Pharmaceutical Journal*, 20(4), 323-330. <https://doi.org/10.1016/j.jsps.2012.05.007>
- Boudreaux, E. D., & O'Hea, E. L. (2004). Patient satisfaction in the emergency department: a review of the literature and implications for practice. *The Journal of emergency medicine*, 26(1), 13-26. <https://doi.org/10.1016/j.jemermed.2003.04.003>
- Hartwell, H. J., Edwards, J. S., & Beavis, J. (2007). Plate versus bulk trolley food service in a hospital: comparison of patients' satisfaction. *Nutrition*, 23(3), 211-218. <https://doi.org/10.1016/j.nut.2006.12.005>
- Lai, H., & Gemming, L. (2021). Approaches to patient satisfaction measurement of the healthcare food services: A systematic review. *Clinical nutrition ESPEN*, 42, 61-72. <https://doi.org/10.1016/j.clnesp.2020.12.019>
- Lemos, P., Pinto, A., Morais, G., Pereira, J., Loureiro, R., Teixeira, S., & Nunes, C. S. (2009). Patient satisfaction following day surgery. *Journal of clinical anesthesia*, 21(3), 200-205. <https://doi.org/10.1016/j.jclinane.2008.08.016>
- Matiti, M. R., & Trorey, G. (2004). Perceptual adjustment levels: patients' perception of their dignity in the hospital setting. *International journal of nursing studies*, 41(7), 735-744. <https://doi.org/10.1016/j.ijnurstu.2004.02.008>
- Naithani, S., Whelan, K., Thomas, J., Gulliford, M. C., & Morgan, M. (2008). Hospital inpatients' experiences of access to food: a qualitative interview and observational study. *Health Expectations*, 11(3), 294-303.
- Sadaf, S., Malik, A. A., Bilal, A., & Saeed, A. (2018). Patient satisfaction regarding food and nutrition care in hospitals of Lahore, Pakistan. *Prog Nutr*, 20, 248-256.
- Sahin, B., Demir, C., Celik, Y., & Teke, A. K. (2006). Factors affecting satisfaction level with the food services in a military hospital. *Journal of medical systems*, 30, 381-387.
- Shirin, S., Mohsin, M., Amin, Z. A., & Kabir, M. I. (2021). Patients' Satisfaction about Quality and Services of Food in a Tertiary Military Hospital. *Journal of Armed Forces Medical College, Bangladesh*, 17(1), 3-6.
- Stanga, Z., Zurflüh, Y., Roselli, M., Sterchi, A. B., Tanner, B., & Knecht, G. (2003). Hospital food: a survey of patients' perceptions. *Clinical nutrition*, 22(3), 241-246. [https://doi.org/10.1016/S0261-5614\(02\)00205-4](https://doi.org/10.1016/S0261-5614(02)00205-4)
- Tranter, M. A., Gregoire, M. B., Fullam, F. A., & Lafferty, L. J. (2009). Can patient-written comments help explain patient satisfaction with food quality?. *Journal of the American dietetic association*, 109(12), 2068-2072. <https://doi.org/10.1016/j.jada.2009.09.001>
- Watters, C. A., Sorensen, J., Fiala, A., & Wismer, W. (2003). Exploring patient satisfaction with foodservice through focus groups and meal rounds. *Journal of the American Dietetic Association*, 103(10), 1347-1349. [https://doi.org/10.1016/S0002-8223\(03\)01077-0](https://doi.org/10.1016/S0002-8223(03)01077-0)

Biography of Authors

	<p>Malikah Al Shemmery (Corresponding Author) Bachelor's degree in Science of Food and Nutrition, King Faisal University. Senior Specialist & Supervisor of Food & Nutrition. Department of Food Services, King Fahad Medical Military Complex (KFMMC), Dhahran. Saudi Arabia Email: Shammary02@yahoo.com</p>
	<p>Abdullah Hakami Master's degree in Public Administration of Health and Hospital Services Management, King Abdulaziz University. Manager of Food and Support Services. Department of Food Services, King Fahad Medical Military Complex (KFMMC), Dhahran. Saudi Arabia. Email: a3-hakmei@hotmail.com</p>
	<p>Ahmed Al Faraidy Master's degree in Public Administration of Health and Hospital Services Management, King Abdulaziz University. Manager Patient Services Administration. The Patient Affairs, King Fahad Medical Military Complex (KFMMC), Dhahran. Saudi Arabia. Email: a.faraedhi@windowslive.com</p>
	<p>Saud Hakami Bachelor's degree in Health Management Taif University. Specialist Health Management of Patient Services Administration. The Patient Affairs, King Fahad Medical Military Complex (KFMMC), Dhahran. Saudi Arabia. Email: saud-0550-0@hotmail.com</p>
	<p>Alanoud Al Buainain Bachelor's Degree in Science of Food and Nutrition King Faisal University. Specialist of Food & Nutrition. Department of Food Services, King Fahad Medical Military Complex (KFMMC), Dhahran. Saudi Arabia. Email: anoudt.ali@gmail.com</p>

	<p><i>Alhanouf Al Nafisah</i> Bachelor's Degree in Science of Food and Nutrition King Faisal University. Specialist of Food & Nutrition. Department of Food Services, King Fahad Medical Military Complex (KFMMC), Dhahran. Saudi Arabia. Email: Alhanouf.a.naf@gmail.com</p>
	<p><i>Abdulhadi Al Zahrani</i> Bachelor's Degree in Science of Food and Nutrition King Faisal University. Specialist of Food & Nutrition. Department of Food Services, King Fahad Medical Military Complex (KFMMC), Dhahran. Saudi Arabia. Email: Ahadiaz027@gmail.com</p>
	<p><i>Eman Al Hoaimal</i> Master in Nutrition & Food Science, Wayne State University. Specialist Dietitian. Department of Clinical Nutrition, King Fahad Medical Military Complex (KFMMC), Dhahran, Saudi Arabia. Email: eyme911@hotmail.com</p>