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Evaluating patient satisfaction with food services provided in Khartoum teaching hospitals

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Abstract

Patient satisfaction is an important issue for all health services, where food services represent one of them, as they help speed up the treatment of hospitalized patients and reduce the length of stay Duration of recovery. The aim of this study was to identify the extent of patients' satisfaction with food services provided in teaching hospitals Khartoum Sudan. In this cross-sectional descriptive analytical study, data was collected from May 1, 2022 to October 31, 2021, by interviewing 802 inpatients in five hospitals in Khartoum State, including (350 from medical wards, 200 from obstetrics and gynecology wards, 80 from surgical wards, 92 from chest disease wards, 80 from cancer patient wards, The data were exported to SPSS, version 22, to obtain more information by analysing the relationship between variables. With statistical significance, a five-point Laser scale was used using arithmetic means and standard deviation to rank the extent of agreement or dispersion around the variables. After analysing the demographic characteristics, the results showed that most of those included in the questionnaire were from the medicine wards (43.6%), at (61.7%) of women and 45.4% of them were in ≥40 years old, and most of them had secondary education (45.4). %), most of them were from villages. In the second section related to food items, food materials were in first place with the highest average and a direction towards good at 73%. As for the question related to the quantity of food, the answer was neutral at 57.6 %, with a minimum average of 2.88 and a standard deviation 0.85. All answers about food distribution tools were neutral. As for the health appearance of food handlers, some of them were good, such as personal hygiene, at 71.8%. As for evaluating satisfaction with employees' behaviours, the answer was positive regarding employee cooperation, but the general samples direction was neutral.

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Introduction

Food services is among the most important services in the hospital and the most complex, due to their connection to the patient's health condition and needs according to the type of disease, which requires connection to the service system that will ensure this. Each country has its own healthcare system to meet their health needs in a manner commensurate with the social, cultural and economic status of the population, distribute it fairly among them and enhance their satisfaction (WHO, 2000).

The system of providing food to patients in hospitals is considered a complex system due to the presence of some interconnected factors. Thus, such as the clinical needs of patients that must be provided according to the type of disease, as well as the preferences of patients and other important characteristics such as diversity in the type of meals, freedom to choose the meal, its quality and appearance, and the taste and smell of the food (Do Rosario and Walton, 2020).

Clinical nutrition plays an important role in accelerating the recovery of ⁾hospitalized patients, especially acute and chronic diseases. Diet is a major determinant of future health, that is, the absence or reduction of complications of some diseases such as heart, kidney, and vascular diseases, diabetes, cancer, and other diseases that require clinical nutrition (Bischoff, 2015).

There are some qualitative studies that have reclassified the quality of health care service into four dimensions, which are as follows: Emotion, which means the feeling or emotion generated by the consumer. (In this research, it means the patient) as this study also stated that enhancing positive emotional states or alleviating their intensity in emotional value plays a vital role in personal health, function, confidence, and social influence. The second value is functional and refers to the economic benefit of the function which provides. In the field of health care, and how patients' consumption of good private health care services helps them achieve good health, this study also stated that promoting positive or mitigating negative emotional states in emotional

value plays a vital role in personal health (Budrevičiūtė, 2019). The third value, according to studies, is trust, as it is achieved in the relationship between the service recipient (patients) and the service provider. The greater the trust, the greater the level of satisfaction in the field of health care (Smith and Swinehart, 2001). Other empirical studies in the medical context also support this finding, such as health insurance products in Malaysia and medical tourism services. The fourth dimension is social influence, which is one of the important dimensions in the level of patient satisfaction in health care (Abdel Fattah, 2021; Jaleel, 2021).

Patient satisfaction with health care services is related to it improving all services by focusing on providing good services, comfort of doctors, nurses, and employees, which is reflected in the high level of satisfaction for everyone (Park, 2015). It is also associated with dissatisfaction. The disappointment experienced by the patient by not providing Perceived performance or experience that does not meet their expectations (Kotler and Keller, 2016). Sometime dissatisfaction can be related to reducing food intake among hospitalized patients   is often associated with adverse health consequences (Agarwal, 2013).

Patient satisfaction is an important component of healthcare quality reflecting healthcare provider's ability to meet patient's needs and expectations. In many countries assessment and measurement of patient satisfaction with the health care system is recognized as the key indicator of health care quality which is defined as the "the totality of features and characteristics of a service that bear on its ability to satisfy a given need (Savage and Armstrong, 1990). Patient satisfaction is measured about the health care system is important in several aspects. Like that the patient becomes more cooperative and compliant with treatment by identifying the level Satisfaction and factors related to dissatisfaction, which differ from one country to another depending on the reforms it carries out in its health services system. Improving the general health status of its resident patient satisfaction surveys empower healthcare providers accountability and leads to improvements in the delivery of various services. It also leads to

improvement. The level of patient safety and reduces the cost of care. As it is used to compare the performance of different healthcare global systems, determining health care policies Organization of services and service provider behaviour best response to patients' expectations or needs (Quintana, 2006).

The goals of a hospital food service are to provide inpatients with nutritious meals that are beneficial for their recovery and health, and also to give them an example of healthy nutrition with menus tailored to patients' specific health conditions. When meals are carefully planned and customized to meet patients' specific needs, and when patients consume what they are served, these goals can be considered as achieved. Meal consumption by inpatients is related to nutritional status and satisfaction with the foodservice (Auagla, 2023).

Materials and methods
Study design
In this cross-sectional descriptive analytical study, data was collected from May 1, 2022 to October 31, 2021, Study population sampling

Study population and sampling
This cross-sectional ,descriptive study was conducted in 5 teaching hospitals in which research was accepted in Khartoum city, which are (Khartoum Hospital, Khartoum Bahry, Omdurman, Al-Dayat Hospital, Corn treatment hospital), through a questionnaire that was conducted among 802 patients admitted to the hospital, which include (350 from medicine wards, 200 from obstetrics and gynaecology wards, 80 from surgical wards, 92 from chest wards, and 80 from cancer patient wards The participant criteria included all patients who agreed to answer the questionnaire in the targeted hospitals during the period from the first of May to October 2021 As all of these are government educational hospitals that provide free food services. All children, critical cases, and all those who did not have the desire to participate were excluded.

Data collection tool
The questionnaire consists of five parts, which are demographic data, evaluation of foods, utensils used,

behaviours and health of food handlers, in providing food services to patients. Data were exported to SPSS, v22, for further information by analysing the relationship between variables. Statistically significant variables were declared using arithmetic means and standard deviation to arrange the variables. This is to determine the level of agreement and dispersion in opinion regarding the questions presented using Likert 5 scale.2.4 Statistical analyses

Statistical analyses
The collected data were entered and analysed using SPSS (Statistical Package for the Social Sciences) for Windows, excel sheet - Using frequency and percentage to describe demographic variables, while other variables were represented by mean and standard deviation using Likert 5 Scale to determine sampling direction.

Results
The final results were obtained after analysing the data using Five-Scale Likert and Excel, and taking some notes during data collection. They were then placed in the following tables and discussed.

The Table 1 shows that the highest number of patients participating in this study were from the medicine wards 43.6%, obstetrics and gynecology words 24.9%, most of them were female (61.7%), the highest percentage of participants were ≥40 years old 34.5% , followed by those who were between 31 - 40 (36.5%) years old, the highest percentage of study participants have a secondary education level 45.4%, {60.5%} of them from villages, (53.9%) of them were hospitalized for more than a week.

The Table 2 contains 15 questions that were arranged after obtaining the arithmetic mean and the standard deviation. Food materials was the first question that had the highest arithmetic mean, which shows the direction on good at 73%, 3.65 arithmetic mean, standard deviation 1 .2, followed by the question about (cooking meat), with the direction of good, at 72.8 %, a standard deviation of 1.12, an average 3.64, followed by the question about (food distribution environment), with the direction of good, at 69.2%, a standard deviation of 0.86, an average 3.46.

Table 1. Demographic data

Parameters		Frequency	Percent	Valid percent	Cumulative present
		Hospitalized patents ward (N=802)			
Valid	Medicine	350	43.6	43.6	43.6
	Surgery	80	10.0	10.0	53.6
	Obstetrics gynecology	200	24.9	24.9	78.6
	Chest	80	10.0	10.0	88.5
	Censor	92	11.5	11.5	100.0
	Total	802	100.0	100.0	
Gender	Female	495	61.7	61.7	61.7
	Male	307	38.3	38.3	100.0
	Total	802	100.0	100.0	
Age groups	≤ 20	45	5.6	5.6	5.6
	21-30	187	23.3	23.3	28.9
	31-40	277	34.5	34.5	63.5
	≥ 40	293	36.5	36.5	100.0
	Total	802	100.0	100.0	
Education	Illiterate	54	6.7	6.7	6.7
	Primary and Khalwa	237	29.6	29.6	29.6
	Secondary	364	45.4	45.4	45.4
	University	147	18.33	18.3	100.0
	Total	802	100.0	100.0	
Residence	City	317	39.5	39.5	39.5
	Village	485	60.5	60.5	100.0
	Total	802	100.0	100.0	
Occupation	No working	350	43.6	43.6	43.6
	Currently working	452	56.4	56.4	100.0
	Total	802	100.0	100.0	
Hospitalization days	< week	370	46.1	46.1	46.1
	>week	432	53.9	53.9	100.0
	Total	802	100.0	100.0	
Marital status	Married	436	54.4	54.4	54.4
	single	366	45.6	45.6	100.0
	Total	802	100.0	100.0	

Table 2. Patients' satisfaction with the food equipments.

Sample size (N=802)

SL Question	Sample redirection	%	Sd	Average	Very poor	Poor	Neutral	Good	Excellent
1 Meal quantity	Neutral	57.6	0.85	2.88	42	194	405	140	21
2 Food spices	Poor	51.4	0.97	2.57	133	215	334	106	14
3 Food materials	Good	73	1.2	3.65	58	84	165	272	223
4 Cooking meat	Good	72.8	1.12	3.64	35	100	190	273	204
5 Suitable meal for illness	Neutral	63.8	1.12	3.19	64	127	322	167	122
6 Food taste	Neutral	63	1.1	3.15	60	140	341	145	116
7 Food choices	Poor	47.2	1.08	2.36	186	317	156	127	21
8 Food flavour's	Neutral	55.2	1.02	2.76	80	250	303	120	49
9 Food cooking level	Neutral	58.6	1.02	2.93	77	151	391	116	67
10 The appropriate temperature	Neutral	59.2	1.01	2.96	53	199	344	136	70
11 Food appearance	Poor	49.2	1.07	2.46	188	215	263	118	18
12 Food decoration	Neutral	54.4	0.95	2.72	72	250	342	104	34
13 Meal providers number (4)	Neutral	65.4	1.13	3.27	85	129	125	413	50
14 Food distribution environment	Good	69.2	0.86	3.46	23	33	389	263	94
15 Providing meal in the wright time	Neutral	62.6	0.85	3.13	31	94	472	147	58

The question that came in fourth was (Meal providers number), Which is followed by the question about the satisfaction of (Suitable meal for illness) in a neutral direction, at 63.8% ,standard deviation 1.12,average 3.19 which was followed by a question about (food taste), with the direction of neutral at 63%, a standard deviation of 1.1, and an average of 3.15, (the meal serving time), where the response direction was neutral at 62.6, an average of 3.13, and a standard deviation of 0.85, the (appropriate temperature of

food), where the response direction was neutral at 59.2%, an average of 2.96, and a standard deviation of 1.01 which is similar to the question about (level of cooking food), where the response direction was neutral with a percentage of 58.6, an average of 2.93, and a standard deviation of 1.02. This is followed by the question about (food quantity), with the direction of neutral at 57.6%, an average of 2.88, and a standard deviation 0.85. followed by the question about (food flavour's) , with the direction of neutral at 55.2%, an average of 2.76, and a standard deviation 1.02, (decoration of the food), with the direction of neutral at 54.4%, an average of2.72, and a standard deviation.0.9 which followed by the question about the (food spices) , and the response direction was poor at51.4%, an average of 2.57, standard deviation 0.97 which is similar to that question about the (food appearance) , the response direction was poor with a percentage of 49.2, an average of 2.4, a standard deviation. 1.07. Likewise, the question related to the freedom to choose a meal, for which the response direction was poor, T 47.2%, an average of 2.36, and a standard deviation. 1.08

The Table 3 shows the extent of patients' satisfaction with the tools used to distribute food. After arranging the questions according to the average in descending order, the first question was about Distribution trolley structure with a direction of neutral at 69.4%, an average of 3.47, a standard deviation of 0.85, followed by the question about the dishes used, with a direction of neutral at 65.4%, average 3.27, standard deviation 1.14. Followed by the question about the (appearance of the utensils) in the percentage of 65.4% with the direction of neutral , average 3.27, standard deviation 1.18, (food covering) at 61.4% with the direction of neutral, average 3.07, standard devaition1.08.Followed by the question about the (trolly cleanliness) at 58.6% with the direction neutral ,average 2.93, standard deviation 1 , followed by the question about the(time to collect equipment after the meal), at 57.8 % and a standard deviation 0.8, an average 2.89, followed by the question about the (time to collect equipment's) at 56.2% ,a standard deviation of 0.97, with an average of 2.81followed by the question about the (food Accessories) with a direction of poor at 48.4% with standard deviation of 0.77, an average of 2.42.

Table 3. Patients' satisfaction with the tools used to distribute food.

Sample size (N=802)									
SLQuestion	Sample direction	%	Sd	Average	Very poor	Poor	Neutral	Good	Excellent
1 Food dishes	Neutral	65.4	1.14	3.27	65	123	267	222	125
2 Accessories with food	Poor	48.4	0.77	2.42	86	339	345	20	12
3 Equipment's appearance	Neutral	65.4	1.18	3.27	74	123	253	217	135
4 Food covering	Neutral	61.4	1.08	3.07	47	191	338	112	114
5 Equipment collection time after meal	Neutral	57.8	0.8	2.89	0	274	378	117	33
6 Equipment cleanliness	Neutral	56.2	0.97	2.81	59	244	334	120	45
7 Trolly cleanliness	Neutral	58.6	1	2.93	69	160	396	115	62
8 Distribution trolly structure	Neutral	69.4	0.85	3.47	22	33	390	263	94

The Table 4 showed 4 assessments of patient satisfaction with the health of food handlers. After arranging the questions according to the average in descending order, the first question was about (food handlers' healthy appearance) with a direction good at 72.2% with a standard deviation of 0.72, an average of 3.61. Followed by the question about (food handlers cleanliness) with the direction of good at 71.8%, a standard deviation of 0.74 , an average of 3.59. The question was about the healthy way of serving food, with a neutral direction, at a rate of 54.4%, with a standard deviation of 0.79, with an average of 2.72.

The fourth question is about handlers' wear protective clothing, with a neutral direction, at 52.8%, a standard deviation of 0.89, with an average of 2.64. The Table 5 showed 5 assessment of patient satisfaction with the food handler's services behaviours. After arranging the questions according to the average in descending order, the first question is about handler's services cooperation, which has a good direction, 73.4%, with a standard deviation of 0.77, with an average of 3.67, followed by the question about handlers' friendly services, which has a neutral direction, percentage 67.8%, with a standard deviation of 0.96, an average of 3.39.

Table 4. Patient satisfaction with the health of food handlers

SL	Question	Sample direction	%	Sd	Average	Very poor	Poor	Neutral	Good	Excellent
Sample size (N=802)										
1	Handlers healthy serving method	Neutral	54.4	0.79	2.72	55	226	406	115	0
2	Handlers wear protective clothing	Neutral	52.8	0.89	2.64	109	165	452	57	19
3	Food handlers' healthy appearance	Good	72.2	0.72	3.61	5	5	384	314	94
4	Food handlers' cleanliness	Good	71.8	0.74	3.59	3	17	383	305	94

Table 5. Patients' satisfaction with the food handler's services behaviours

SL	Question	Sample direction	%	Sd	Average	Very poor	Poor	Neutral	Good	Excellent
1	Handler's services cooperation	Good	73.4	0.77	3.67	7	24	297	371	103
2	Politely serving food	Neutral	56.6	1.09	2.83	124	169	240	255	14
3	Helping the other staff members for patients eat the meal	Neutral	57.6	1.04	2.88	98	164	301	211	28
4	Handlers friendly services	Neutral	67.8	0.96	3.39	48	91	203	421	39
5	Handlers Accept directions for meal needs	Neutral	61	1.02	3.05	72	134	332	212	52
6	Handlers of food Politely collection dishes	Neutral	60.2	1.13	3.01	98	172	196	293	43

Table 6. Word-based comparison of data related variables.

N = 802	Present	Missing	Present	Present
word * Food distribution time	100.0%	0	0.0%	100.0%
word * Meal quantity	100.0%	0	0.0%	100.0%
word * food materials	100.0%	0	0.0%	100.0%
word * Food spices	100.0%	0	0.0%	100.0%
word * cooking meat	100.0%	0	0.0%	100.0%
word * The appropriate temperature	100.0%	0	0.0%	100.0%
word * food appearance	100.0%	0	0.0%	100.0%
word * Food distribution time	100.0%	0	0.0%	100.0%
word * Food decoration	100.0%	0	0.0%	100.0%

Then the question about handlers accept directions for meal needs, which has a neutral direction, percentage of 61 %, a standard deviation of 1.02, an average of 3.05. Then the question about handlers of food politely collection dishes, which has a neutral trend of 60.2 %, a standard deviation of 1.13, an average of 3.01 followed by the question helping the other staff members for patients eat the meal, which has a neutral direction, 57.6%, a standard deviation of 1.04, an average of 2.88, followed by the question about politely serving, which has a neutral direction, 56.6%, a standard deviation of 1.09, an average of 2.83. The Table 6 shows the distinct relationship between patient's word and some variables, which is significant. Correlation is significant at the 0.00 level (2-tailed). The overall average for the axis as a whole shown in Table 7. There are several observations during interviews with patients, which are that a number of patients do not eat some meals.

Table 7. The overall average for the axis as a whole.

The overall average for the axis as a whole	Mean	Sd	%	Sample direction
	3.17	1.4	63.4	Neutral

There was also some courtesy in filling out the questionnaire, but it was made clear that this was for the public benefit, and many of them changed their answers after that. There is a weakness in the way food services are provided in a way that attracts the patient to eat the meal, such as paying attention to serving utensils and not paying attention to the appropriate uniform for food handlers, also, one of the most important observations that I noticed affect the extent of the patient's satisfaction with food services are the demographic characteristics of the patient, such as the economic and cultural situation and urbanization, where sometimes what suits others finds that it does not suit him, in addition to his health condition, especially some patients such as pregnant women and some diseases that need care, especially those affected by mood in choosing some foods.

Discussion

This study attempted to evaluate patient satisfaction regarding the food service that is routinely provided in some teaching hospitals. There were a number of questions asked to patients about their degree of satisfaction with a number of sections It was designated as either extremely satisfied, good, neutral, poor, or very poor. It also included some demographic questions about the participating patients Who were their total 802 participants, the majority were women, at 61.7%, perhaps due to the involvement of the maternity hospital in the age group ≥40 years, perhaps as a result of some diseases, as most of the patients were from internal medicine wards (43.6%), which include a different number of types of diseases, especially chronic diseases such as diabetes and blood pressure, Regarding the section that evaluate the level of satisfaction, and according to the arrangement of the questions according to the arithmetic mean and standard deviation, there was agreement among patients regarding satisfaction with the materials used in the meals, at 73%, while there was no satisfaction among patients with the choice of meals, at 47.2%, as the meals were presented in their original form. Routine and there is no opportunity to choose meals, As for the section of the questions about the equipment used, there was a lack of agreement on some questions, such as distribution tools, with the answer being neutral or dissatisfaction at f 69.7%. Likewise, the answer for accessories with poor was at 48.4%. Most participants agreed on most of the section related to food handlers' behaviors, such as their cooperation with patients, at 73.4%, as well as satisfaction with their personal cleanliness, at 71.8%, which is one of the important factors in maintaining food safety, despite patients' dissatisfaction with workers wearing their distinctive uniform. Because most of the answers were not devoid of dissatisfaction, the general direction for all variables was dissatisfaction or neutral. There were also some observations while filling out the questionnaire that support this direction in the answers. Therefore, it was important to pay attention

to some shortcomings in providing meals and supporting the nutrition departments with what they need. In a similar study on service approach in food services results revealed a decrease in patients' satisfaction with hospital nutritional services and their satisfaction with regular nutritional services and the factors associated with them regarding aspects of food characteristics and physical environment, flavour of meals, and well-cooked meals were identified as factors statistically associated with patient satisfaction with food services in hospitals (Teka, 2022).

Conclusion

This study determined that the variables with which patients were most dissatisfied were food enhancers, and that the obstetrics and gynaecology department was the least satisfied among the other criteria.While there was some satisfaction with the cooperation of food handlers, the general direction to all questions was neutral, which indicates that all answers direction to indicate a lack of general satisfaction with these services.

Recommendations

Based on the results of this study, the factors that affect patient satisfaction must be addressed with regard to improving food services in the hospital, such as methods of distributing and timing meals, and taking into account the quality and appearance of the meal. Nutritionists and supervisors must also pay attention to the external appearance of workers in terms of appropriate clothing from a health standpoint. And the etiquette of how meals are served. Health administration officials must pay attention to the needs of the nutrition department to meet the desires of patients

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