

Measuring Patients' Satisfaction of Food Services Provided in Minia Public Hospitals

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Abstract

The food served in hospitals is part of the patients' clinical treatment. Arrangements for food preparation, distribution, and serving should ensure that hospital food is of defined standards such as nutritional quality, balance, palatability and temperature

For achieving this aim this research has set certain objectives. Firstly, identifying the level of food services provided in Minia public hospitals. Secondly, identifying the views of the patients about the level of food services provided to the Minia public hospitals. Thirdly, identifying the efficiency of food services providers in Minia public hospitals through patients' comments.

This study was applied to Minia public hospitals. The sample was consisted of all hospitals in Minia Center. The researcher took 118 samples of hospitals' patients. This sample was selected randomly from Minia public hospitals. The researcher designed one tool for the sample: a scale to measure patients' satisfaction.

The results indicated that the patients were not satisfied in regards to the meal choices and the serving method. Factors like temperature and hygiene conditions were not always in a way that fulfils the necessary prerequisite requirements. In addition, food service providers don't care about help patients in their wards. Thus, patients don't have comfortable and satisfaction.

The researcher recommends that there should be adequate staffing available at meal times to ensure that patients are given the assistance they need; Patients should be given food that follow quality standards and adequate staff that is trained on health and safety issues, food hygiene and well interaction with patients.

Key words: Food Services, Minia Public Hospitals, Patients, Food Hygiene, Quality.

Introduction

Hospital food and nutrition services are considered by McLymont *et al.* (2003) and Williams *et al.* (1998), as playing an important role in patient recovery and well-being. In addition, foodservice quality is also a large influence in a patient's overall hospital stay comfortable. Competition in the healthcare industry is pushing administrators to innovate, become more customer oriented and improve perceived patient foodservice quality (Goehring, 2002). The Scottish

Government (2008) declared that food in hospitals is one of the important part of an integrated programmed for improving nutritional care in hospitals. It is fundamental that hospitals provide appropriate food, beverage and nutritional care to manage any nutritional risk, to improve nutritional health and well-being and optimize the wider clinical management of all patients. Appropriate food and beverage provision needs to be recognized as a fundamental part of every patient's clinical care.

One of the fastest growing trends in hospital food service is implementation of a room service system. Upgrading hospital services and showing appreciation to patients influence patients' overall perceptions of quality of care, increases their nutritional intake, and enhances their satisfaction (Mohd, 2010).

Room service system affects patient's health. Norton (2008) mentioned that, many conventional food service administrators are questioning if changing to a room service system is right for their operation and value the cost. Glind *et al.* (2007) found that single rooms for patient have a moderate effect on patient satisfaction with care, noise and quality of sleep, and the experience of privacy and dignity, while others concluded that single rooms decrease the risk of hospital infections. This is evidence on recovery rates and patient safety was lacking. Chaudhury (2014) added that the private patient rooms reduce the risk of hospital-acquired infections, allow for greater flexibility in operation and management, and have positive therapeutic impacts on patients.

Buzalka (2008) and Norton (2008) mentioned that room service has several advantages; some of the proven top advantages include improved patient control over food choices, improved patient satisfaction, improved food temperatures, increased foodservice employee pride in their job, decreased plate waste and decreased food cost. On contrast, Sheehan-Smith (2006) pointed out the main disadvantage of room service is increased cost. Increased cost mainly comes from initial investment in new equipment and computer software and initial staff training costs.

Meals served in wards are of important role for patient recovery. Lund and Obrien, (2009) declared that meals offered to patients inside the hospital environment are a part of their overall care for recovery. Obviously, this food should be safe and of good quality. However, there are many recorded cases of food-borne infections in hospitals. Such cases may lead to serious diseases, expensive treatments for their cure, contamination to other patients, and services disorganization. More recently study conducted by Mentziou *et al.* (2014) revealed that the consequences of food borne infections can range from annoying to life-threatening for a patient, since they can lead up to death in vulnerable groups. In the context of the overall effort to improve quality of hospital food services, nutrition has been of particular interest.

In fact, the patient perception of the served meals is directly related with their comfortable of the overall hospital services (Fallon *et al.* 2008). Furthermore, it should take into consideration that a large percentage of the meals served in the ward are not consumed – with obvious financial consequences – it is evident that the food offered should be desirable by the consumers. In order for this to be achieved, food quality factors or factors regarding the performance and behavior of the personnel involved in food services should be estimated. However, the most important reason why hospitals should be very careful in food services is the direct relation of a good nutritional status with the overall healing course of the patient. A bad nutritional status combined with the severity of the disease can increase hospitalization time or even morbidity (European Centre for Disease Prevention and Control, 2013).

Maintaining food quality is as important as room service. Wreight *et al.* (2006) affirmed that the perception of food quality can depend on several different attributes, including meal taste, variety, flavor, the texture of meat and vegetables, the perception of choosing a healthy meal. In addition, menu changes implemented to improve food quality must, therefore, address a wide range of influences. Each hospital food service institution is unique and interventions must be customized to the specific patient population's needs and perceptions.

Meal rounds are a tool for evaluation of inpatients food intake/tolerance and satisfaction with food services. In addition, typical meal rounds involve members of food service staff visiting patients during meal times and inquiring about food intake and satisfaction as well as observing tray set-up, appearance of food, and need for feeding assistance. Furthermore, meal rounds can be effective in improving the quality of foodservices and can be used as a continuous quality improvement activity to readily identify nutrition risk factors (Keller *et al.* 2006).

Personnel serving and distributing meals affect food services at hospitals. It is apparent from many studies and surveys undertaken that responsibility for delivering meals to individual patients on the wards is ambiguous and where it is clearly defined, procedures are not adhered to implementation. Savage and Scott, (2005) suggested that this is due to a decline in nurse's managerial authority and ill-defined responsibilities of the nursing staff. Nurses' involvement in the nutritional care of patients has varied considerably since the time that matrons managed the kitchen, nursing arrangements and domestic staff.

With the growth in size and complexity of hospitals, non nursing staffs were employed to supervise housekeeping services and were managed by senior nurses or lay hospital administrators. In the late 1960's the roles and responsibilities of nurse managers changed; they were relieved of any managerial responsibilities for housekeeping services and relinquished

responsibilities for coordinating the non clinical support services that contributed to patients' treatment and welfare. It was recommended that tasks involving preparing and distributing patients' food and drinks at mealtimes, collecting and clearing meals, preparing trays and setting up bedside tables were to be delegated to non-nursing staff and these teams of 'housekeeping' staff would then be managed by senior grade housekeepers and seconded to work with ward nursing teams (Savage and Scott, 2005).

The system used in the preparation and distribution of meals to patients in hospitals. Horan and Coad (2000) recognized the limitations for meal preparation particularly with regard to presentation, appearance, temperature of the meals, accessibility of the meals to patients and portion size. Providing and distributing meals to hospital patients which was previously a nursing role is now frequently relegated to ancillary staff and Health Care Assistants with tray collection by the housekeeping staff (Horan and Coad, 2000, O'Regan, 2009). It is suggested that this can free nurses from the 'non nursing' duty of foodservice and provides them with more time for 'higher priority activities' (O'Regan, 2009).

Edwards and Hartwell (2010) pointed out that a cook-serve system is a 'traditional' catering operation where food is prepared and cooked on site and distributed at the appropriate temperature to the wards, either already plated or in bulk. This system allows for batch cooking which minimizes hot-holding and nutrient losses and optimizes the food's sensory characteristics as it can be prepared close to the time required. However, in practice there can be a substantial time delay between production and consumption as wards are often situated a long way from the kitchen. The result is that many of the potential advantages are not realized. The same author added that another system of cook-serve to patient as follow; food is cooked and held at a temperature of 70 - 75°C or more for at least two minutes. Chilling occurs within 30 minutes of cooking and the temperature of the food is reduced to 0-30°C within 90 minutes. This temperature is maintained throughout the storage and distribution cycle until regeneration occurs.

The suitable method used in food delivering to patient may be optimize the food amount which patient taken (Horan and Coad, 2000). The meals may be of the highest quality but if the presentation and delivery of them is poor, the value is lost if meals are not consumed by the patient. According to the Audit Commission (2001) the quality of the service provided can be considered in terms of patient satisfaction, relationship to cost and presentation and delivery of the meal service.

Problem of the study

In Egypt, Many public hospitals face many challenges in relation to the way food is presented; a lot of wastage; overproduction; inappropriate mealtimes and interruptions during meal service. A few research studies have been completed from patients' perspectives, especially on patients' satisfaction and comfortable with foodservice provided. The problem of the study states that the level of food services provided to patients in government hospitals aren't characterized with good final quality, that's leads to detriment for patients and affect their satisfaction and comfort, so services should be facilitated and offered to the patients best is one in a way that raise the degree of their comfort and satisfaction.

Aims of the study

The study aims at; recognizing the level of food services provided in Minia public hospitals, identifying the views of the patients which relate to the level of food services provided to the Minia public hospitals and exploring the efficiency of food services providers in Minia public hospitals through patients' comments.

Hypotheses

This study is based on two hypotheses;

H1. The level of food services provided do not exceed 75% (touchstone of quality in light of experts' opinions from staff and doctors who work in nutritional field).

H2. There are statistically significant differences between the various pathological conditions in their evaluation of food services.

Limitations

The researcher conducted the research on Minia public hospitals, whereas population includes all public hospitals in Minia center. A scale tool of this study distributed to patients in hospitals departments. This research has been preparing through May 2013 till December 2014 AD.

Research Methodology

The researcher chose complete census for the study. The number of Minia public hospitals is six. The researcher designed one tool: a scale for patients. The scale consists of 16 simply phrased in order to be comprehended by the patients. All phrases were closed type and one phrase was open type (comments). All of phrases comprise of a numeral scale, as Likert scale (penta ranking), 118 patients included in the conducted research Minia public hospitals were of the following cases: abdominal diseases, surgery operations, kidney failure, and cardiology & respiratory in addition disease fever department.

The scale phrases measures level of food services provided to patients in Minia public hospitals (food choice, food ordering, food delivering, food quality and the overall meal). Patients' comments were also used to determine the nature of the food services provided to them.

Results and Discussions

First: Validity of scale:

The scale was displayed on a group of judges to comment and after unpacking the judges' opinions on the primary image scale phrases, the researcher collected phrases which approved by 80% and exclude the rest. So, the total agreed phrases are 16 phrases.

It has been gradually phrases of scale for five-scaling as follows: always, often, sometimes, rarely, and never which taken score in SPSS program 5, 4, 3, 1, and 1 correspondingly.

Second: Test the reliability by using Cronbach's alpha coefficient: Using the SPSS program got the following results:

Table (1) explain Cronbach's alpha coefficient $\alpha_T = 0.986$ and noted that the value of reliability Cronbach's alpha coefficient close to one value which indicates that the high reliability.

Table1: Reliability of the scale

Cronbach's Alpha	No of Items
0.986	16

Third: Test the internal consistency:

Table2: Items Total Statistics (Cronbach's Alpha)

Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1. There was a good choice/variety of food dishes.	39.0339	319.828	.972	.984
2. I am able to choose a healthy meal in hospital.	39.2542	326.123	.931	.984
3. I know the choice available to me at each meal.	39.3814	330.922	.891	.985
4. I was able to select my own meal from the list supplied.	39.6780	339.024	.801	.986
5. I received the meal that I ordered.	39.6102	331.659	.853	.985
6. The staffs who deliver my meals are neat and clean.	38.3305	326.035	.911	.985
7. I did not order my own meal	38.6441	323.291	.857	.985

but ate the meal provided.				
8. The staffs who deliver my menus are helpful	38.7373	319.016	.948	.984
9. The food has good flavor.	38.8051	322.859	.929	.984
10. The food has good texture.	38.8136	319.743	.954	.984
11. The food was well presented on the plate.	38.8729	330.129	.787	.986
12. The food was served at the appropriate temperature, i.e. either hot or cold.	39.1695	324.039	.917	.985
13. I enjoyed the food served to me.	39.1186	323.952	.948	.984
14. I was satisfied with the meal.	39.0169	322.017	.935	.984
15. The portion size was sufficient.	38.7542	322.033	.947	.984
16. I was able to eat without assistance.	38.8051	326.927	.779	.986

Previous Table (2) showed phrase correlation coefficient with total degree after delete phrase degree, and notes from the table that all scale items strongly correlation coefficient (from 0.779 to 0.972).

In addition, the fifth column in previous table showed the value of Cronbach's alpha coefficient when delete any phrase. It was clear that the Cronbach's alpha coefficient did not exceed the total value 0.986 when delete any of the sixteen phrases.

Response rate for respondents:

Number of respondents who entered the survey: 130 sample and number of completed surveys: 118 sample.

To calculate the response rate, Response Rate = Number of completed surveys / Number of respondents who entered the survey. So the Response Rate is 90.7%. So the response rate is very good.

Fourth: Test the first hypothesis, which states that the level of food services provided in Minia public hospitals do not exceed 75% (touchstone of quality in light of expert opinions).

Table3: Descriptive Statistics as Mean, Std. Deviation and Percentage Mean of samples

Items and Dimensions	Mean	Std. Deviation	Percentage mean for samples
		Statistic	
First dimension (food choice)	4.92	2.59709	0.49153
1. There was a good choice/variety of food dishes.	2.56	1.38662	0.51356
2. I am able to choose a healthy meal in hospital.	2.35	1.25662	0.46950
Second dimension (food ordering)	4.14	2.06425	0.41441
1. I know the choice available to me at each meal.	2.22	1.16308	0.44406
2. I was able to select my own meal from the list supplied.	1.92	1.01406	0.38474
Third dimension (food delivery)	11.08	4.91218	0.554235
1. I received the meal that I ordered.	1.99	1.18751	0.39830
2. The staffs who deliver my meals are neat and clean.	3.27	1.28543	0.65424
3. I did not order my own meal but ate the meal provided.	2.95	1.44645	0.59152
4. The staffs who deliver my menus are helpful	2.86	1.44361	0.57288
Fourth dimension (food quality)	10.75	5.04372	0.537290
1. The food has good flavor.	2.80	1.35596	0.55932
2. The food has good texture.	2.79	1.41332	0.55762
3. The food was well presented on the plate.	2.73	1.33116	0.54576
4. The food was served at the appropriate temperature, i.e. either hot or cold.	2.43	1.33640	0.48644
Fifth dimension (the meal overall)	10.72	5.16083	0.535595
1. I enjoyed the food served to me.	2.48	1.29913	0.49662
2. I was satisfied with the meal.	2.58	1.37329	0.51694
3. The portion size was sufficient.	2.84	1.35638	0.56950
4. I was able to eat without assistance.	2.80	1.45332	0.55932
Total for all dimensions	41.60	19.23456	0.5200212
	17		5

It is noted that from the previous table the following results for dimensions and its' phrases as follows

The first dimension was food choice:

- By pathological responses concerning the phrase "there was a good choice/variety of food dishes" observing mean =2.56 and the relative mean is (0.513) which it was less than (75%), this was due to the absence of diversity or choice of dishes or food items provided to patients, where menu items offered to the most fixed, with the exception of some items of some pathological cases. It could be argued that patients were unhappy with the menu as they often received something different than what they had expected.
- The investigators indicated that they were able to choose "the patient able to choose a healthy meal in hospital" the mean =2.35 and the relative mean is (0.469) which it is less than the required quality. The reasons of this were the

patient take his offered meal by the hospital and do not interfere never in selection of meals, so this affects negatively on patient satisfaction degree.

The second dimension was food ordering:

- With regard to phrase “the patient know the choice available at each meal” the mean = 2.22 and the relative mean is (0.444) which it was less 75%, the reason for that was patients with special dietary requirements expressed the opinion that staff did not pay enough attention to their requirements. So, patient didn’t know any items offered in each meal.
- The phrase which stated that “the patient able to select his own meal from the list supplied” the mean value =1.92 and the relative mean was (0.384) which was much less than the required quality, the reasons for this were all of Minia public hospitals offered fixed menu had limited items no choice from it. In addition, food prepared in central kitchen then offered to patient. So, it was not found menu offered to patient.

The third dimension was food delivery

- It was noted that the respondents' answers about the fifth phrase “the patient received the meal that he/she ordered” the mean =1.99 and the relative mean was (0.398) which it was less than 75%, this was due to patients complained that they did not always get what they ordered from the menu, many patients wished greater care for them when giving out food to ensure get what they had ordered.
- It was noted that the patients’ answers about the phrase “the staffs who deliver patient meals were neat and clean” the mean =3.27 and the relative mean was (0.654) It was not close to the limit of 75% because of food supervisors did a complete supervision on food providers belong to general health and personal hygiene which improves patient satisfaction.
- “the patient did not order his own meal but ate the meal provided” the mean =2.95 and the relative mean was (0.591) this is disagreed completely with food services quality touchstone in Minia hospitals (75%), this was due to the same reasons mentioned in the third, fourth and fifth previous phrases.
- The respondents’ answers which related to “The staffs who deliver my menus are helpful” the mean =2.86 and the relative mean was (0.572) this was less than the required quality, this was due to the majority of patients were very concerned that there was no help when they had problems with eating. In addition, food providers for patients didn’t help them and some patients expressed about their view that there were family members who wished to help feed patients instead of meal providers. Also, they provided care and comfort when it comes to meals and meal times in hospitals.

The fourth dimension was food quality

- The phrase which stated that “The food which offered for patient has good flavor” the mean =2.79 and the relative mean was (0.559) it was less than the required quality touchstone in hospitals (75%), because of the central kitchen of Minia public hospitals situated in New Minia city in cardiology & respiratory hospital with distance 13 kilometers far about Minia governorate. So, food lost its flavor and warmth.
- The patients’ answers showed belong to “The food has good texture” the mean =2.79 and the relative mean was (0.557) which it was less than the required quality touchstone because of individuals who prepared meals in central kitchen had not enough experience in this field. In addition, these hospitals follow governmental sector.
- For the sample responses of phrase “The food was well presented on the plate” the mean =2.73 and the relative mean was (0.545) which was less than the required quality, where all meals are served to patients in Minia public hospitals on Service (like plate) made of stainless, and they did not use plates made from china or pottery or any other metal.
- It was noted that the respondents' answers about “The food was served at the appropriate temperature, i.e. either hot or cold” the mean =2.43 and the relative value was (0.486). This was less than of required quality, when it came to food, taste and temperature were important in an enjoyable meal due to the most of views’ patients were in relation to the temperature of food; often, it arrived cold or not warm enough to be fully enjoyed because the central kitchen was far about Minia governmental hospitals.

The fifth dimension was the overall meal:

- For the views of patients with belong to the phrase “the patient enjoyed with the food served to him” Also, the phrase No. 14 “patient was satisfied with the meal” the mean = 2.48, 2.58 and the relative mean was (0.496), (0.516) as respectively. It was less than the required quality touchstone in hospitals (75%), this was due to more reasons as temperature, texture of the provided food to patient and the dish using in meal. In addition, not help the patient in ward to handle his meal push the patient didn’t enjoy with the provided meal. Therefore, patient didn’t feel comfort and satisfaction.
- It was noted that the respondents' answers about the fourteen phrase “The portion size was sufficient for patient” the mean =2.85 and the relative mean was (0.569). This is less than of (75%) the reason for this was the size of the portions was often seen as small, especially for elderly patients. One of the patients’ view expressed was that patients felt hunger after having been given small portions. Patients with special dietary requirements expressed the opinion that staffs did not pay enough attention to their requirements.

- Through the patients' views with belong to the last phrase No. 16 "patient was able to eat without assistance" the mean =2.80 and the relative value was (0.559) which it was less than the required quality it was observed that many comments of patients suggested having staff available to assist with feeding if they need help. Staff should also ensure that patients can eat in peace and quiet.

Patients' comments:

- Food often not appropriate for patients with illness condition/dietary requirements.
- Staff went for their meal when kitchen staff brought food to ward.
- Staff set trays down and don't tell patients meal is there, elderly patients couldn't see or feel the tray so often don't eat meals.
- Nurses too busy to help patients at meal times.
- Food left on trolley for long time before being given out to patients' food cold.
- Member of family always allowed in at mealtimes to help.
- Patients won't have the knowledge that nursing staff have. Thus, patients could be put at risk.
- Most of meals don't have meals in good condition (temperature, flavor and texture).

It was also clear from the previous table No (3) Means and relative Means of the scale and its' dimensions, it was also less than the required quality touchstone in food services provided in hospitals (75%), also from patients' comments these confirmed the validity of the first hypothesis.

So, the first hypothesis was true which states that "the level of food services provided in Minia public hospitals did not exceed 75% (touchstone of quality in light of expert opinions).

Test the second hypothesis: it states that there are statistically significant differences between the various pathological conditions in their evaluation of food services which provided in Minia public hospitals.

One – Way Analysis of Variance (ANOVA) was carried to study the differences between the various pathological cases to know their food services' evaluation in Minia public hospitals. This carried in every dimension and every phrase of scale.

The following Table No. (4) Illustrates One – Way Analysis of Variance test (ANOVA) for the basic of questionnaire dimensions (food choice – food ordering – food delivery – food quality – the meal overall).

Table4: ANOVA Test for All Dimensions Scale

Scale Dimensions		Degree of freedom	Mean Square	F	Sig.
F.C	Between Groups	4	10.549	1.596	.180
	Within Groups	113	6.610		
	Total	117			
F.O	Between Groups	4	12.163	3.055	.020
	Within Groups	113	3.981		
	Total	117			
F.D	Between Groups	4	48.231	2.072	.089
	Within Groups	113	23.276		
	Total	117			
F.Q	Between Groups	4	44.133	1.781	.137
	Within Groups	113	24.777		
	Total	117			
M.O	Between Groups	4	131.452	5.734	.000
	Within Groups	113	22.924		
	Total	117			
Total dimensions	Between Groups	4	782.942	2.203	.073
	Within Groups	113	355.350		
	Total	117			

Note: (F.C) Food Choice – (F.O) Food Ordering – (F.D) Food Delivery – (F.Q) Food Quality – (M.O) Meal Overall)

From the previous table, there are statistically significant differences between the various pathological cases in the second and fifth dimensions (food ordering – the meal overall) where F value was 3.055 where significance level 0.020 while F value was 5.734 and this value is significant at level 0.000. While there are no statistically significant differences between the other three dimensions.

Table No. (5) Illustrates Post Hoc Test (Scheffe) to know the differences between the various pathological conditions in each dimension as following:

Table5: shows Post Hoc Tests (Scheffe) multiple comparisons between pathological cases

Dependent Variable	(I) case	(J) case	Mean Difference (I-J)	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Food Ordering	1	2	1.08120	.360	-.5332-	2.6956
		3	1.38362	.185	-.3408-	3.1080
		4	.65336	.872	-1.1910-	2.4977
		5	-.44138-	.975	-2.4288-	1.5460
	2	1	-1.08120-	.360	-2.6956-	.5332
		3	.30242	.989	-1.3966-	2.0015

		4	-.42784-	.969	-2.2485-	1.3928
		5	-1.52258-	.216	-3.4880-	.4429
	3	1	-1.38362-	.185	-3.1080-	.3408
		2	-.30242-	.989	-2.0015-	1.3966
		4	-.73026-	.840	-2.6492-	1.1887
		5	-1.82500-	.110	-3.8818-	.2318
	4	1	-.65336-	.872	-2.4977-	1.1910
		2	.42784	.969	-1.3928-	2.2485
		3	.73026	.840	-1.1887-	2.6492
		5	-1.09474-	.642	-3.2531-	1.0636
	5	1	.44138	.975	-1.5460-	2.4288
		2	1.52258	.216	-.4429-	3.4880
		3	1.82500	.110	-.2318-	3.8818
		4	1.09474	.642	-1.0636-	3.2531
The meal Overall	1	2	-3.19466-	.162	-7.0684-	.6791
		3	2.56609	.442	-1.5717-	6.7039
		4	1.43013	.905	-2.9955-	5.8558
		5	-1.11724-	.969	-5.8861-	3.6516
	2	1	3.19466	.162	-.6791-	7.0684
		3	5.76075*	.001*	1.6839	9.8376
		4	4.62479*	.032*	.2560	8.9936
		5	2.07742	.753	-2.6387-	6.7935
	3	1	-2.56609-	.442	-6.7039-	1.5717
		2	-5.76075*	.001*	-9.8376-	-1.6839-
		4	-1.13596-	.963	-5.7405-	3.4686
		5	-3.68333-	.250	-8.6186-	1.2520
	4	1	-1.43013-	.905	-5.8558-	2.9955
		2	-4.62479*	.032*	-8.9936-	-.2560-
		3	1.13596	.963	-3.4686-	5.7405
		5	-2.54737-	.668	-7.7264-	2.6317
	5	1	1.11724	.969	-3.6516-	5.8861
		2	-2.07742-	.753	-6.7935-	2.6387
		3	3.68333	.250	-1.2520-	8.6186
		4	2.54737	.668	-2.6317-	7.7264

Note: * The mean difference between the study cases.

Note:* The mean difference is significant at the 0.05 level.

Note: the ordered in previous table as follows:

- Case (1) refers to cardiology & respiratory, case (2) refers to surgery operations, case (3) refers to kidney failure, case (4) refers to abdominal diseases and finally case (5) refers to diseases fever.
- Table No. (5) illustrated that there were statistically significant differences between the various pathological cases in the second dimension but it was not

clear the direction of this difference by using the previous test Scheffe, where significance level > 0.005 in all cases.

- There are statistically significant differences between the second case (surgery operations) with the third case (kidney failure) in the evaluation of food services provided to them in Minia public hospitals where mean difference value was (5.76075) and this value is significant at level 0.001. The results were positive in direction of surgical patients; this was clear in the only fifth dimension (the meal overall) where the patient needs to a complete meal with whole nutrients, size of the meal offered to patients are enough to get the appropriate nutrients, in addition to nurses little help patients to eat their meals.
- There are statistically significant differences between the second case (surgery operations) with the fourth case (abdominal diseases) in the evaluation of food services provided to them in Minia public hospitals where mean difference value was (4.62479) and this value was significant at level 0.032. The results were positive in direction of surgical patients; this was clear in the only fifth dimension (the meal overall) for the same reasons mentioned above. This was due to all of surgery operations need more welfare than other departments in hospitals, so patients need more balance meals and sometimes blood to compensate blood, which lost it during surgical operations. In addition, those patients need more help from nurses.

Patients' comments:

In addition to the foregoing comments:

- Food was placed in front of people without ensuring that they were able to reach and eat it.
- There was not enough staff to ensure that each patient was able to eat the meals provided.
- Foods didn't be served at an acceptable temperature, appropriate portion size, good quality and don't contain fresh fruit and vegetables.

From the previous discussion and patients' comments the second hypothesis achieved which states that "there are statistically significant differences between the various pathological conditions in their evaluation of food services which provided in Minia public hospitals".

General discussion and conclusion

Generally, the results of this research indicate that the majority of the patients seem to not be pleased from the quality and the variety of the meals, as well as food services. In fact, this affects the degree of satisfaction and comfort for them. When it comes to patients' perception of a meal, various different factors

play a role in determining their level of satisfaction. Taste, variety, flavor, temperature of hot foods, and texture of meat and vegetables are all key variables that influence patient satisfaction. Aside from the characteristics of the food itself, the helpfulness of staff, the presentation of a meal, the perception of choosing a healthy meal, and the ability to choose the meal size also influence patient satisfaction. It is important to remember that the food is only one aspect of a patient's overall experience during his or her stay in a hospital. . Seemingly small things such as the way in which employees interact with patients, also influences their hospital experience and can have an impact on customer satisfaction.

In conclusion, the research illustrated that food services provided in Minia public hospitals did not reach the required quality level through apply quality criteria. Also, the research shows that there staff needs to be aware of the needs and requirements of individual patients. In addition, vulnerable patients should be assisted with feeding when required. The research showed also there were slight differences in various food services provided in different pathological cases, this lead to patient dissatisfaction.

Recommendations

The research recommends that feedback obtained from patients' statements is important for hospital management as they determine operational strengths and weaknesses for continued quality improvement. In addition, analysis of patient satisfaction data is a valuable tool, not only to attract market share from patients, but also to use as a guideline for strategy development in the future. The researcher recommends the following:

1. Decisions makers (ministry of health) should support policy making by exploring, indicating and initiating improvements in patient housing and quality of care.
2. Food needs to be served so that patients can fully enjoy it, so food should be served at an acceptable temperature, good texture and good flavor; come in appropriate portion size; be of good quality; and contain fresh fruit and vegetables to achieve patient satisfaction.
3. There should be adequate staffing available at meal times to ensure that patients are given the assistance they need.
4. A volunteer strategy and action plan should be developed to enable volunteers to assist patients at meal times.
5. There needs to be better communication between staff and patients. Staff needs to be aware of those patients who have special dietary requirements or who need help when eating.

6. Patients should be provided with the equipment/utensils for eating/drinking that meet their individual needs.
7. All staff in contact with patients and their food and beverage should receive training in health and safety issues and food hygiene adequate with their duties.

Limitations and future research:

Limitations research might focus on participants were limited to a sample 118 patients in all Minia public hospitals. It is likely that patients, who are most severely ill, have limited literacy skills and those from non-English speaking background are underrepresented. In addition, patients were only surveyed one time during their hospital stay, typically within a couple days of admission and it is possible that patients' opinions of food service satisfaction changed over the course of their stay.

Future research might focus on investigating whether most patients now expect hotel-style room service belongs to food service during hospital stays and what has influenced their expectations. In addition, the information in this study may be utilized as a basis for further research, also further exploration into what influences patient expectations in a given region may be helpful in determining future plans to improvement food service to achieve patient satisfaction.

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Appendix: (Scale)

I want improve the hospital food services and I need to know your opinions by completing this questionnaire, thank you.

1. General information

- Pathological case:

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2. Hospital food services

Remark: simply tick (✓) one box per line which applies using the scale 1-5.

	ways	ten	metimes	rely	ver
	5	4	3	2	1
Food Choice					
There was a good choice/variety of food dishes.					
I am able to choose a healthy meal in hospital.					
Food Ordering					
I know the choice available to me at each meal.					
I was able to select my own meal from the list supplied.					
Food Delivery					
I received the meal that I ordered.					
The staffs who deliver my meals are neat and clean.					
The staffs who deliver my menus are helpful.					
I did not order my own meal but ate the meal provided.					
Food Quality					
The food has good flavor.					
The food has good texture.					
The food was well presented on the plate.					
The food was served at the appropriate temperature, i.e. either hot or cold.					
	ways	ten	metimes	rely	ver
	5	4	3	2	1
The Meal Overall					
I enjoyed the food served to me.					
I was satisfied with the meal.					
The portion size was sufficient.					
I was able to eat without assistance.					

الملخص العربي

قياس رضا المرضى عن الخدمات الغذائية المقدمة في مستشفيات المنيا الحكومية

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يعتبر الطعام الذي يقدم في المستشفيات جزء من العلاج الاكلينيكي للمرضي. حيث أن الترتيبات الخاصة بإعداد وتوزيع وخدمة الطعام يجب أن تضمن أن طعام المستشفى ذو معايير محددة مثل الجودة الغذائية، وتوازن الوجبة، واستساغة الوجبة ودرجة حرارتها. ولتحقيق هذا الهدف في هذا البحث وضعت مجموعة من الأهداف تتمثل في أولاً: التعرف علي مستوى خدمات الأغذية المقدمة في مستشفيات المنيا الحكومية. ثانياً: التعرف علي وجهات نظر المرضى حول مستوى الخدمات الغذائية المقدمة في مستشفيات المنيا الحكومية. ثالثاً: معرفة كفاءة مقدمي الخدمات الغذائية في مستشفيات المنيا الحكومية من خلال تعليقات المرضى. تم تطبيق هذه الدراسة علي مستشفيات المنيا الحكومية وتكونت عينة الدراسة من المستشفيات الحكومية بمركز المنيا فقط.

تكونت عينة الدراسة من 118 مفرة من مرضي مستشفيات المنيا الحكومية، وتم اختيار هذه العينة عشوائياً من المستشفيات المختارة. وقام الباحث بتصميم أداة واحدة للعينة: مقياس لقياس رضا المرضى عن خدمات الأغذية المقدمة بمستشفيات المنيا الحكومية.

أشارت نتائج الدراسة إلي أن المرضى غير راضيين فيما يتعلق بإختيار الوجبات وطريقة الخدمة، العوامل الأخرى المتعلقة بالطعام مثل درجة حرارته والشئون الصحية لا تتم بطريقة تلبي متطلبات المرضى. بالإضافة إلي ذلك لا يهتم بمقي الخدمات الغذائية بمساعدة المرضى في العنابر الخاصة بهم وبالتالي لا يشعر المرضى بالراحة والرضي عن الخدمات المقدمة لهم. وقد أوصت الدراسة بضرورة وجود عدد كاف من العاملين في أوقات تقديم الوجبات للتأكد من أن المرضى يحصلون علي المساعدة المطلوبة، كما ينبغي إعطاء المرضى الوجبات الصحية التي تم انتاجها طبقاً لمعايير الجودة وأن الأفراد الذين يقومون علي تقديم الوجبات وخدمتها قد تلقى التدريبات الكافية المتعلقة بقضايا السلامة والصحة الغذائية والتفاعل بشكل جيد مع المرضى.

الكلمات الدالة: خدمات الأغذية، مستشفيات المنيا الحكومية، المرض، الصحة الغذائية، الجودة.