

**ANALYSIS OF VARIABLES AFFECTING THE SATISFACTION LEVELS OF PATIENTS
TOWARD FOOD SERVICES AT KING ABDULAZIZ HOSPITAL
, MINISTRY OF NATIONAL GUARDS.WARD 6(BUSINESS CENTER &
MPD).ALHASSAEASTERN REGION,.KINGDOM OF SAUDI ARABIA.**

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ABSTRACT: *Objective:* To determine the variables affecting general satisfaction level of patients with the food services in king abdulaziz hospital for national guards-alhassa in KSA. *Study design:* The study was carried out in King Abdulaziz hospital for national guards ,KSA which is providing health care services with the capacity of 300 hospital bed. A questionnaire was used as data collection tool on measuring satisfaction of the patients with the food services and some quantitative metrics were used like regression and simulation. *Results:* These suggest that increasing the level of satisfaction with taste and appearance of foods decreases the level of dissatisfaction or increases overall satisfaction among the patients. Furthermore, the results of this study showed that there was a negative relationship between length of stay and overall satisfaction with hospital food and food services.

Conclusions: The results of this study would be helpful in making decision on increasing the level of satisfaction of patients with the food services for hospital managers and the food (nutrition) departments. On the other hand, the results can also be used in benchmarking the hospital's food services quality with other hospitals, and in monitoring improvements in food services quality in the future.

Keywords: Patient Satisfaction, Quality, Service, Food. Complaint, Hospital, Expectation.

1-INTRODUCTION:

1.1. DEFINITION:

Patient satisfaction: is a measure of the extent to which a patient is content with the health care which they received from their health care provider. (1)

In evaluations of health care quality, patient satisfaction is a performance indicator measured in a self-report study and a specific type of customer satisfaction metric .It is a working definition is the degree to which the patient's desired expectations, goals and or preferences are met by the health care provider and or service.

1.2.-ORIGION OF THE PROBLEM:

Patient complaints have a long history of use in the health system as a measure of dissatisfaction, but it is perceived foodservice quality contributes to patient recovery and overall satisfaction of hospital stay. However, in recent hospital post-discharge patients have scored King Abdulaziz Hospital for national guards, KSA as below average for satisfaction in overall quality of foodservice. Using patient perceptions as an indicator of service quality in health care goes parallel to the developments in other service sectors.

2-PURPOSE AND OBJECTIVES OF STUDY:

2.1. PURPOSE:

The purpose of this study is to determine implications for improving foodservice satisfaction in medical/surgical BC ward6 at King Abdulaziz Hospital in alhassa using a validated tool.

2.2. OBJECTIVES:

To improve foodservice satisfaction at KAH the objectives include:

- (1) Identify the patient variables that contribute to foodservice dissatisfaction utilizing a validated patient questionnaire.
- (2) Plan and implement improvement interventions on the lowest scoring foodservice categories.
- (3) Monitor patients' satisfaction changing scores.
- (4) Determine and recommend further changes on to improve the quality of patient foodservice satisfaction to the higher management.

2.3.HYPTHESIS:

1. "Patient's satisfaction of different food aspects and food services' quality in a hospital had a critical effect on the length of recovery and life quality'.
2. "Well - managed communication with patients and health care providers can influence in improving satisfaction with foodservice system".

3- LITERATURE REVIEW:

The trend in healthcare is to treat the patient as a client. Literature shows that this trend affects many issues. However, the management of a hospital faces an enduringly changeable market where externalities appear frequently. So, 'patients' satisfaction, is a patient uses different criteria of a health service assessment in respect to a routine visit.

1-A review of the relevant literature indicates that service quality in the hospital is closely tied to customer satisfaction. As in (H.J. HARTWELL *et al*, 1982) (2)

' Food service in hospital: an indicative model for patient satisfaction.'

They conducted a research to explore the antecedents to patient satisfaction with food quality within a hospital setting and develop an indicative model. They used a consumer opinion card (adapted from Cardello) concentrating on the quality indicators of core foods was used to measure patient satisfaction.

The opinion card was distributed (n=180) by the researcher on the wards during meal times for both systems of delivery. Comparison between service style and food attribute was tested using the Mann-Whitney U Test. Binary logistic. They found that the bulk trolley method of food distribution enables all foods to have a better texture, and for some foods temperature, and for other foods flavor than the plate system of delivery, where flavor is associated with bad opinion or dissatisfaction.

2- So, among the major frameworks, researcher (Parasuraman *et al*, 1985) (3) - used "A *conceptual model of Service Quality and its Implication for Future Research SERVQUAL*". The researchers relied on a tool namely the SERVQUAL scale which based on the gap score among customers' expectations and perceptions; it was introduced as consumer's satisfaction. To find the gap score which measures the service quality?

3 - Other study entitled (*THERESA MONTINII, ALICE A. NOBLE et al*. 2008) (4). "Content analysis of patient complaints" researchers developed a standard taxonomy for inpatient complaints

that could be adopted in a wide array of health service institutions. Main outcome measure(s). Patient complaints codes, provider codes and inter-rater reliability they found that Four codes were each used in more than 10% of the patient complaints filed: unprofessional conduct (19%); poor provider–patient communication (17%); treatment and care of patient (16%); and, having to wait for care (11%), they conclude that Standardized coding of patient complaint data may provide an opportunity for quality improvement, patient satisfaction and changes in patient care.

4- In another study, European researcher (Dr. Jane Pillinger, 2005) (5) in his newsletter (*“Rethinking the Quality of Social Services in Europe”*) was emphasizing on rethinking quality initiatives to interlink quality improvement with user involvement and participation and with social equality and inclusion.

5- Nevertheless, (Bayram Sahin, et al, 2006)(6) , have tended to” *Factors Affecting Satisfaction Level with the Food Services in a Military Hospital”* to focus on service quality. To determine the factors affecting general satisfaction level of patients with the food ,it was estimated in determining the most important and statistically significant factors affecting patient satisfaction with hospital foods and food services by using a logistic regression model. The results showed that of 374 patients 51.3% evaluated food service quality adequate, 32.4% said that the food quality was inadequate, and 16.3% stated that they were uncertain. The limitations showed that patient-specific demographic characteristics were insignificant in explaining satisfaction level with food services, on the other hand, the variables of taste (OR = 9.853, $p = 0.000$) and appearance (OR = 2.687, $p = 0.014$) of the food were statistically significant and important determinants of patient satisfaction with the foods served at the hospital.

6- Beside that, in the early work of (Ann Kutney-Lee, et al ,2009)(7)” *Nursing: A Key To Patient Satisfaction”* The researchers asserted on patient satisfaction that is receiving greater attention as a result of the rise in pay for-performance (P4P) and the public release of data from the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey. so the limitations of this study was Longitudinal analysis would better assess causality as well as potential unmeasured variables.

7- In another article conducted by Dr. atiyah musleh.(8) “ *Measuring the quality of service from the point of view of employees and patients in hospitals”* he identified the quality level of the actual services perceived by staff and patients in hospitals operating in the city of Qalqilya. He used the

descriptive method and *SERVPERF* scale to measure the quality of perceived and actual service, questionnaire which suggests that the responses of the studying sample towards actual and perceived quality of services, by staff and patients were high on all fields of study and on the total score. Also there were significant differences on the following areas: power response, safety and trust, and empathy due to the variable of gender was in favor of males,

4-MATERIALS AND METHODS:

4.1. Main criteria:

The main criteria for the sample selection were the ability of the patients on evaluating different aspects of food and food service system quality (Patient satisfaction and patient s's complaints). After meeting sample selection criteria, the patients were informed about the study, and patients who accepted to participate in the study voluntarily were included in the sample.

4.2-Methodology:

4.3. Data Collection methods, instruments used and measurements

2.1.1. Interview questionnaire was used for measuring satisfaction of the patients with food and food services.

2.1.2. Patient Oriented Hospital Foodservice:

The link between a patient-oriented service culture and patient satisfaction is becoming clear. One of the most important principles in patient-oriented service is creating an environment that meets or exceeds patient expectations

4.5. Population and Sample

A convenience sample of 60 participants was used in study. The target population consisted of inpatients served by the foodservice department during a minimum two-day stay at medical/surgical BC ward at KAH for national guards-alhassa.

4.6. Research design:

This research is descriptive research it is describe the impact of variables that effect on patients' satisfaction about the food in medical/surgical, business center ward6 in king abdulaziz hospital for national guards-alhassa.

4.7. Data Analysis and Interventions:**. Summary statistic:**

| Question | Poor (Q=<20) | | Fair(20<Q=<40) | | Good (40<Q=<60) | | Very good (60<Q=<80) | | Excellent (80<Q=<100) | | Total |
|---|--------------|----|-----------------|----|------------------|-----|-----------------------|-----|------------------------|-----|-------|
| | number | % | number | % | number | % | number | % | number | % | |
| 1-Was the portion size adequate? | 11 | 7% | 15 | 9% | 39 | 24% | 45 | 28% | 52 | 32% | 162 |
| 2-How was the flavor/taste of the food? | 1 | 1% | 2 | 1% | 15 | 9% | 12 | 7% | 132 | 56% | 162 |
| 3-Was the temperature of the food ok? | 13 | 8% | 6 | 4% | 22 | 14% | 28 | 17% | 93 | 57% | 162 |
| 4-How was the food variety? | 5 | 3% | 7 | 4% | 22 | 14% | 25 | 15% | 103 | 39% | 162 |
| 5-How was the food presentation? | 5 | 3% | 4 | 2% | 23 | 14% | 18 | 11% | 112 | 51% | 162 |
| Your appetite/hunger? | 3 | 2% | 2 | 1% | 9 | 6% | 8 | 5% | 140 | 31% | 162 |
| 7-How would you rate the overall quality? | 4 | 2% | 2 | 1% | 12 | 7% | 31 | 19% | 113 | 46% | 162 |
| 8-How the servers collect the trays. | 3 | 2% | 2 | 1% | 9 | 6% | 8 | 5% | 140 | 68% | 162 |
| 9-What is your evaluation of food maturity? | 6 | 4% | 8 | 5% | 9 | 6% | 24 | 15% | 115 | 56% | 162 |
| 10-What is your evaluation The smell of food? | 9 | 3% | 10 | 6% | 18 | 11% | 15 | 9% | 110 | 34% | 162 |
| QUALITY OF THE FOOD | 20% | | 40% | | 60% | | 80% | | 100% | | |
| AVERGE PERCENTAGE OF THE PATIENTS SAT | 3% | | 4% | | 11% | | 13% | | 47% | | |

Table 1: Summary statistic of the survey

The quality of food is defined as:

Poor quality is less than or equal 20%

Fair is more than 20% and less than or equal 40 %

Good is more than 40% and less than or equal 60%.

Very good is more than 60% and less than or equal 80%.

Excellent is from 80 to 100%.

Note: the quality of the food is the independent variable.

The patient’s satisfaction: is the average of the patient’s satisfaction percentage

Note: The patient’s satisfaction is the dependent variable.

Nevertheless, this study tended to study the relationship between the quality of the food and food given to the patient satisfaction level.

Regression analysis is used in this study to determine the relationship function between the two variables:

| SUMMARY OUTPUT | | | | | | | | |
|------------------------------|---------------------|-----------------------|---------------|----------------|-----------------------|------------------|--------------------|--------------------|
| <i>Regression Statistics</i> | | | | | | | | |
| Multiple R | 0.848400107 | | | | | | | |
| R Square | 0.719782742 | | | | | | | |
| Adjusted R Square | 0.626376989 | | | | | | | |
| Standard Error | 11.04988688 | | | | | | | |
| Observations | 5 | | | | | | | |
| <i>ANOVA</i> | | | | | | | | |
| | <i>df</i> | <i>SS</i> | <i>MS</i> | <i>F</i> | <i>Significance F</i> | | | |
| Regression | 1 | 940.9 | 940.9 | 7.705978706 | 0.069223145 | | | |
| Residual | 3 | 366.3 | 122.1 | | | | | |
| Total | 4 | 1307.2 | | | | | | |
| | <i>Coefficients</i> | <i>Standard Error</i> | <i>t Stat</i> | <i>P-value</i> | <i>Lower 95%</i> | <i>Upper 95%</i> | <i>Lower 95.0%</i> | <i>Upper 95.0%</i> |
| Intercept | -13.5 | 11.58921913 | -1.164875722 | 0.328275791 | -50.3820676 | 23.3820676 | -50.3820676 | 23.3820676 |
| Q | 0.485 | 0.174714052 | 2.775964464 | 0.069223145 | -0.07101809 | 1.04101809 | -0.07101809 | 1.04101809 |

Table 2: Regression statistics

Based on the above analysis the relationship function is:

$$\text{Satisfaction} = -13.5 + 0.485 \text{ Quality}$$

Simulating the relationship between the quality of the food and the patient satisfaction using the equation:

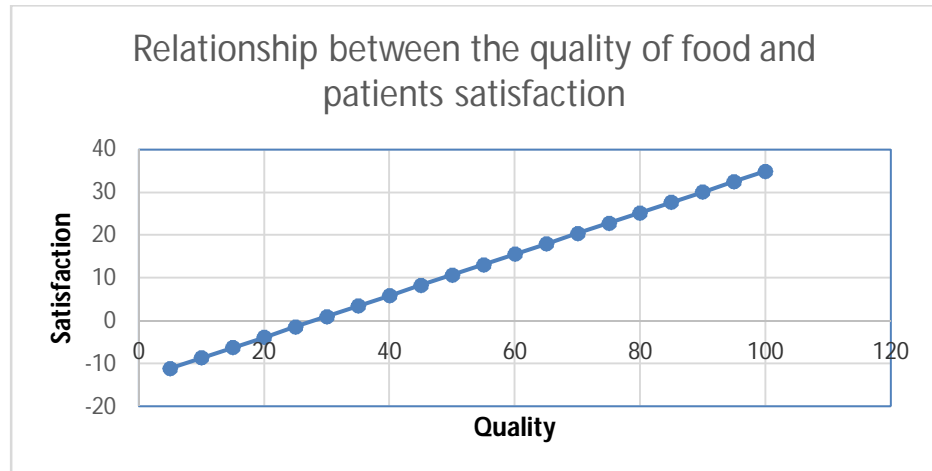


Figure 1: Relationship between the quality of food and patients satisfaction

Source: Author' statistics

| Quality | Satisfaction |
|---------|--------------|
| 5 | -11.075 |
| 10 | -8.65 |
| 15 | -6.225 |
| 20 | -3.8 |
| 25 | -1.375 |
| 30 | 1.05 |
| 35 | 3.475 |
| 40 | 5.9 |
| 45 | 8.325 |
| 50 | 10.75 |
| 55 | 13.175 |
| 60 | 15.6 |
| 65 | 18.025 |
| 70 | 20.45 |
| 75 | 22.875 |
| 80 | 25.3 |
| 85 | 27.725 |
| 90 | 30.15 |
| 95 | 32.575 |
| 100 | 35 |

Table 3: Relationship between the quality of food and patients satisfaction

It can be seen from above mentioned table and figure that the patient's satisfaction is increasing as the quality of the food increases.

Clinical dietitians and me as my job title is a medical unit assistant I/Interpreter, were responsible for the distribution and collection of surveys on a same-day basis. Surveys were distributed in-person, throughout the dietitians' shift. Patients who were visually or physically impaired and could not complete the survey independently were offered assistance. Data were collected using an interview questionnaire. The questionnaire was divided into 4 parts: Part (1) included the admission data, ward name and bed ,part (2) to determine the level of satisfaction of patients with the quality of different aspects of food and food services and giving five choices (poor ,fair, good, very good ,excellent) , and part (3) to determine the patient perception on service providers in healthcare unit and the role of the food services system toward satisfaction patient's need by giving tow choices (yes, no) Part (4). The patients were required to give their opinions whether or not they were satisfied with the different items included in the questionnaire.

These responses were assigned the following scores: Excellent = 5, Very good = 4, good = 3 ,Fair= 2 ,Poor=1

| Spec | # OF PT | 100% |
|---------|---------|--------|
| MEDICAL | 52 | 42.62 |
| GS | 18 | 14.75% |
| PLASTIC | 1 | 0.82% |
| ORTHO | 11 | 9.01% |
| MAXILO | 1 | 0.82% |
| ENT | 1 | 0.82% |
| URO | 17 | 13.93% |
| NS | 7 | 5.73% |
| VAS | 1 | 0.82% |
| NEURO | 2 | 1.63% |
| CARDIO | 11 | 9.02% |
| OPHTH | 3 | 2.45% |

Table 4: Percentage of the socio-demographic characteristics of the patients

Source: Author' statistics

The socio-demographic characteristics of the patients in the sample of study

The result of this study showed that patient specific characteristics (the socio-demographic characteristics of the studied patients, such as age and gender to be insignificant variables in affecting overall satisfaction of the patients

| Aspects attached to the hospital foods and food services | Overall satisfaction |
|--|----------------------|
| Taste of food | 56% |
| Amount of food | 32% |
| Temperature of food | 57% |
| Variability of food | 39% |
| Smell of food | 34% |
| Maturity of food | 56% |
| Food presentation(overall quality) | 46% |
| Serving utilities types | 123 |
| Attitude and behaviors of the serving staff | 68% |

Table 5: views of the patients on the aspects attached to foods and food services of the hospital.

Source: Author' statistics

Table shows the correlation coefficients between the variables of overall satisfaction and nine aspects attached to foods and hospital food services. The results showed that all correlation coefficients were statistically significant. These results suggest that increasing the quality of eight aspects of foods and hospital food services increases the level of overall satisfaction with foods and food services.

5-EVIDENCE BASE:

There is evidence that patient satisfaction survey data is underutilized by staff, which may help explain the reported lack of change. Measures relying on complaints have been shown to be more responsive to change than those relying on satisfaction measures.

5.1. Hypothesis:

1-Patient's satisfaction of different food aspects and food services's quality in a hospital had a critical effect on the length of recovery and life quality.

In sight of this part 1(Q1,Q2,Q3,Q4,Q6,Q7,Q8,Q9,Q10),Part2(Q1)(Q2)Part 3(Q1)

Hospital malnutrition is a main problem, since it increases the severity of illnesses, and lengthens recovery duration, and length of stay. Therefore, there is a significant positive relation between the patient's satisfaction of different aspects of food and services' quality on the length and recovery

period .When the views of the patients on different aspects of foods and hospital food services were considered (Table 1), it was found that, (46%) of the patients were satisfied overall with the quality of food services in the ward in general, that the most satisfied aspect by the patients was “Did the diet tech. visit you within 24hrs?” of your admission. and (105) of the patients’ answers (yes) were satisfied with this aspect. On the other hand, the aspect that the patients were the least satisfied with was “Was the temperature of food ok??” As stated by (8%) and (7%) of “Was the portion size adequate?”. This means the first hypotheses is accepted.

| Month: October 2013 | | Day: Wednesday | | Date: 23rd October 2013 | | From: 06h00 - 06h00 | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-------------------------|--|---------|-------------------------|-------|--|----------|-------------|----------|--------------|----------|-----------|----------|----------|----------|--------------|------------|----------------|--------------|------------------------|-----------|------------------|-----------|-------------|---------------|----------|-----|-------------|------------------------------|--|
| 24-HOUR SHIFT REPORT INPATIENT UNITS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ward | Bed Capacity | Previous Patient Census | | | Time | Admission | | Transfer In | | Transfer Out | | Discharge | | Death | AMA | | OOP | | OR Cases | Current Patient Census | | | Sitters | VACANT BEDS | BORROWED BEDS | STAFFING | | | | |
| | | Adult | Neonate | H Neonate | | Adult | Neonate | Adult | Neonate | Adult | Neonate | Adult | Neonate | | Adult | Neonate | Adult | Neonate | | Adult | ICN/NICU | Healthy Neonates | | | | SN's | PCT | Start/Shift | | |
| W4 Peds. | 27 | 23 | | | 18h00 | 4 | | 2 | 1 | | | 8 | | | | | | | 1 | | 20 | | 19 | | | 5 | 1 | 5 | | |
| | | 20 | | | 00h00 | 2 | | 1 | 1 | | | | | | | | | | | | 22 | | | | | | | | | |
| | | 22 | | | 06h00 | 1 | | 1 | | | | | | | | | | | | | 24 | | 23 | 3 | | 5 | 1 | 5 | | |
| Peds Step-down | 4 | 4 | | | 06h00 | 1 | | | 1 | | | | | | | | | | | | 4 | | 1 | | | 2 | 1 | 2 | | |
| | | 4 | | | 06h00 | 1 | | | 1 | | | | | | | | | | | | 4 | | 0 | 0 | | 2 | 1 | 2 | | |
| | | 6 | | | 06h00 | | | | | | | | | | | | | | 2 | | 6 | | 1 | | | 5 | 0 | 5 | | |
| PICU | 4 | 6 | | | 00h00 | | | 1 | 1 | | | | | | | | | | | | 6 | | 1 | | | | | | | |
| | | 6 | | | 06h00 | | | | | | | | | | | | | | | | 6 | | 1 | -2 | | 5 | 0 | 5 | | |
| W5 Onc | 12 | 10 | | | 18h00 | | | | | | | | 1 | | | | | 1 | | | 9 | | 5 | | | 3 | 1 | 3 | | |
| | | 9 | | | 00h00 | | | | | | | | 1 | | | | | | | | 8 | | 4 | 4 | | 3 | 1 | 3 | | |
| | | 8 | | | 06h00 | | | | | | | | 1 | | | | | | | | 8 | | 4 | 4 | | 3 | 1 | 3 | | |
| Ward 6 Bus. C | 20 | 22 | | | 18h00 | 1 | | | 3 | | 2 | | | | | | | | | 4 | 18 | | 4 | | | 6 | 2 | 6 | | |
| | | 18 | | | 00h00 | | | | | 2 | | | | | | | | | | | 16 | | 5 | 5 | | 6 | 2 | 6 | | |
| | | 16 | | | 06h00 | 1 | | | | | | | | | | | | | | | 17 | | 5 | 5 | | 6 | 2 | 6 | | |
| Ward 7 Male Med | 12 | 12 | | | 18h00 | | | 1 | | | 1 | | | | | | | | | | 12 | | 4 | | | 3 | 1 | 3 | | |
| | | 12 | | | 00h00 | | | | | | 1 | | | | | | | | | | 12 | | 5 | 0 | | 3 | 1 | 3 | | |
| | | 12 | | | 06h00 | | | | | | | | | | | | | | | | 12 | | 5 | 0 | | 3 | 1 | 3 | | |
| CCU | 8 | 5 | | | 18h00 | 4 | | | | 1 | | | | | | | | | | | 8 | | 1 | | | 4 | 1 | 4 | | |
| | | 8 | | | 00h00 | | | | | 1 | | | | | | | | | | | 7 | | 0 | 1 | | 4 | 1 | 4 | | |
| | | 7 | | | 06h00 | | | | | | 1 | | | | | | | | | | 7 | | 0 | 1 | | 4 | 1 | 4 | | |
| Ward 8 Male Surgical | 33 | 28 | | | 18h00 | 4 | | | | | | 6 | | | | | | | 2 | | 26 | | 10 | | | 6 | 1 | 6 | | |
| | | 26 | | | 00h00 | 2 | | | | | | | | | | | | | | | 28 | | 8 | 5 | | 6 | 1 | 6 | | |
| | | 28 | | | 06h00 | | | | | | | | | | | | | | | | 28 | | 8 | 5 | | 6 | 1 | 6 | | |
| Ward 8 Step-down | 6 | 5 | | | 18h00 | | | 1 | | | | | | | | | | | | | 6 | | 1 | | | 3 | 1 | 3 | | |
| | | 6 | | | 00h00 | | | 1 | | | | 1 | | | | | | | | | 6 | | 1 | | | 3 | 1 | 3 | | |
| | | 6 | | | 06h00 | | | | | | | | | | | | | | | | 6 | | 1 | 0 | | 3 | 1 | 3 | | |
| Total Beds (without healthy neonates) | 245 Bed Capacity | Total | | | | 29 | 3 | 23 | 7 | 19 | 4 | 45 | 8 | 0 | 0 | 0 | 8 | 0 | 21 | | | | | | | | | | | |
| | | Pt. Census (Adult & ICN/NICU) = | | | | 206 | | | | | | | | | | TOTAL | 210 | 1800hrs | 173 | 25 | 12 | 57 | | | | | | 81 | | |
| | | 206 Occupied Beds | | | | Pt. Census (Healthy Neonates) = | | | | | | | | | | 11 | | 212 | 00h00 | 176 | 25 | 11 | 0 | | | | | | # of Nurses Per Shift | |
| | | 39 Vacant Beds | | | | Total Patient Census = | | | | | | | | | | 217 | | 0600hrs | 181 | 25 | 11 | 61 | 39 | 0 | | | | | 79 | |

Table 6: 24 hours shift report for ward 6 to show the relation between food’s satisfaction and length of staying

SOURCE: Authors’ tabulation of data from Nursing shareware file

Available on the king abdulaziz hospital for national guards.

2- Well - managed communication with patients and health care providers can influence in improving satisfaction with foodservice system .Part 1(Q5) &Part 2(Q1, Q2, Q3, Q4 , Q5)

In this study i found that positive relation between staff interacting and communicating with patients during meal service and patient’s satisfaction of food services system .Therefore, personal contact with other staff (dietician, physician, nurse, and food services management) is beneficial because patients perceive emotional support. As stated (107) and (121) were answered positively (Yes) they were satisfied of food services process” Were you given the opportunity to specify the food items that you have to avoid? And” Did you receive the food you requested?

More than the ones (129) who answered negatively (No) they were the least satisfied of “Are you on special diet? And (84) answered “No” of the question “Are you aware between meal nourishment?”. That means the second hypotheses is accepted

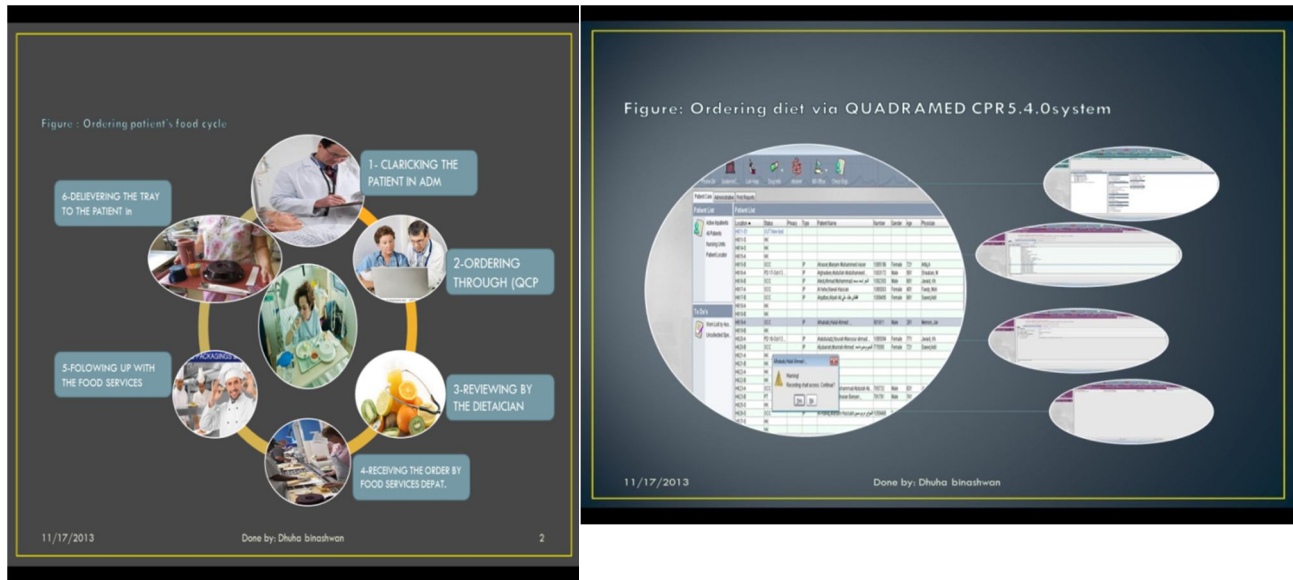


Figure 2: The process of ordering the meal for patient via QUADRAMED 5.4.0 system.

SOURCE1 : Authors' data/

king abdulaziz hospital for national guards.KSA

6-DISCUSSION AND FINDINGS::

In this study, improving hospital foodservice quality is complicated since hospital foodservice includes both tangible and intangible aspects. Therefore, quality improvement strategies should be developed from a holistic point of view. and foodservice is a system where subsystems including procurement, production, distribution/service, and safety/sanitation are interrelated is considered as a first attempt at investigating hospital foodservice quality at all stages, from menu planning to meal service.

1-The study results showed that almost half of the patients (48.7%) stated that they were not overall satisfied with food and hospital food services.

2-Dissatisfaction rate was even higher among the patients having more than one hospitalization (52.6%).The most important determinants of overall dissatisfaction were found to be the variables of taste and appearance of foods.

3-Furthermore, the results of this study showed that there was a positive relationship between length of stay and overall satisfaction with hospital food and food services.

4- The results of this study as well as other studies also suggest that the perception of patients on food quality is a multisensory situation.

5-And., it also showed patient specific characteristics such as age and gender were found to be insignificant variables in affecting overall satisfaction of the patients. This means it is necessary to focus on some food-specific features such as taste and appearance rather than patients' characteristics to increase the overall satisfaction of the patients with hospital food.

6-The study also showed that food type (special hospital diet normal, cardiac or diabetic diet) was not a significant determinant of overall satisfaction with hospital food and food services.

7. Results showed that (78.8%) of patients were satisfied overall with quality of food services in hospitals.

8. The results of logistic regression suggest that increasing the level of satisfaction with Foods's aspect quality decreases the level of dissatisfaction or increases overall satisfaction among the patients.

9. It is important to evaluate patient point of views to make sure on whether the food served to the patients meets the expectations of patients.

10. Room service systems improve intake and assists in their recovery and regaining of their health.

11. Patients will primarily decrease food wastage, and will contribute in making significant savings.

12. It was founded that, one of the most serious hazards, a lack of control has been overlooked in foodservice quality management. Food service professionals in hospitals should continuously manage production processes to improve quality of products and efficiency of processes.

13. Obtaining the required positive and measurable benefits to convince the hospital's senior leadership to embark on the journey of outsourcing is daunting. In addition, the senior decision maker must carefully consider the verification process to be used to ensure the desired results This is through drawing decision tree that includes both alternatives (Altamimi Company 1, company Service medical system 2) and state of nature (favorable company and unfavorable company).

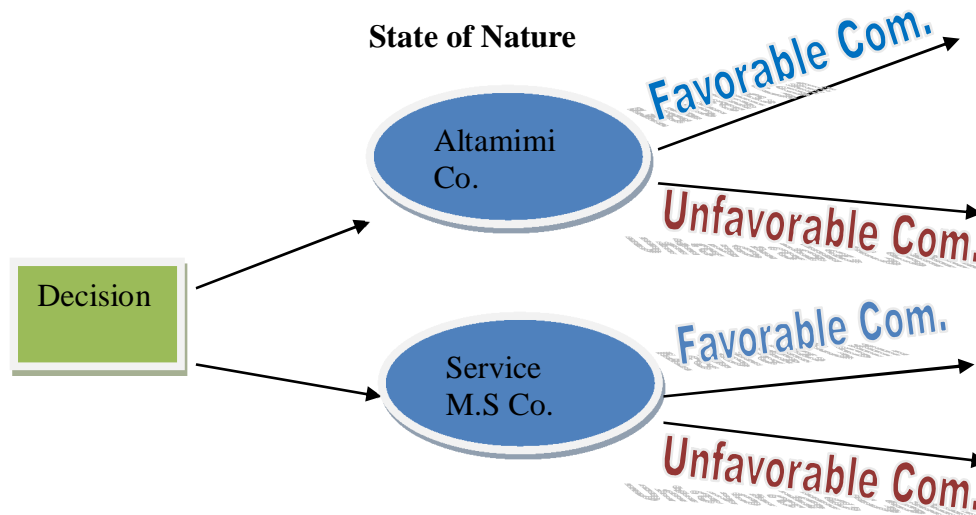


Figure 3: Management's decision tree

SOURCE: Authors' data

14. The bottom line to outsourcing is that outsourcing can be successfully implemented in a manner that benefits administration, staff, the vendor, and most importantly, the patient. (9)

6.1. Conducting Inventory and Tracking Usage:

***How to Count Inventory**

Total inventory is typically counted once a week. To avoid problems with counting, it is good practice to have the manager, or better yet, patient clinical technician or unit assistant. Follow these steps to conduct an inventory count:

1. Start a new inventory report in your accounting software.
2. Print an inventory count sheet.
3. Take a physical inventory and write down the amounts of all food and supplies on your count sheet.
4. Enter your counts into your accounting software.

One thing to look out for is the number of days between the time you order and the time you receive the delivery. (10)

6.2.Determining our projected supplies:

Determining our projected food supplies is one way can help us estimate about how much nourishment order we will do between the time we placed the order and the time we receive it. We use the following guidelines to determine the projected orders:

1. Estimate the per patient check averages for item throughout the week.
2. Make an approximation of how many patients our ward will see for the meal period each day.
3. Total the customers and multiply by the estimated check average.
4. Repeat the above steps for all meal periods.

Using accounting software makes taking inventory ten times easier. The software Oracle system and quaderamed install in our back office computer and keeps track of all counts, even creating weekly reports so we can easily see any changes or discrepancies from week to week.

7-The researcher's comments on the previous literature review:

As I noticed that other studies were constructed with the help of the literature review and previous studies regarding this issue, the tool was also tested for validity, reliability and suitability. Basically, the data are limited in the degree to which they explore patients 'satisfaction; however, the finding suggests that nursing may be an important factor in the overall patient experience. Others proposed a balance between the hospital's aims and the cost. Yet, the existing researches vary on the context of their design.

Consequently, the responses were then collected for analysis which used non-parametric statistics as normal distribution was not confirmed. On the other hand, some used a questionnaire survey to measure the quality of service from patients' perspective in the hospital and the results based on a factor analysis and identifying factors that influence users' evaluation of service quality of hospital food services. And it was founded that the primary limitation of this study is the scope and size of its sample.

In fact, the need for a generic model of patient's satisfaction assessment needs to a methodological variation in the measurement process. Moreover, all these studies aimed to interpret the impact of quality food services perceived dimensions of all, the role of health care providers perceived by customers in satisfaction with their services in order to reach results. My study is based on two hypotheses head, it focused on the impact of the above factors and their relationship with the patient.

Also, I noticed that most studies use a different methodology, sampling processes, calculations and presentation of findings. I see how difficult it is to undertake a systematic review state a definition and create a stand-alone concept. And most studies emphasizing on patient satisfaction that have an empirical conclusion.

From my point of view, it agreed with a few, previous studies that have used this part of measurement such as Standard taxonomy, Logistic regression, SERVPERF, SERVQUAL which were applied on workers and patients, and vary with some studies only conducted on workers or patients only. It agreed also with another study results that patient-specific demographic characteristics were insignificant in explaining satisfaction level with food services.

Thus, it disagreed with some studies such as (*Factors Affecting Satisfaction Level with the Food Services in a Military Hospital* 2006) paying greater attention to the patient as a result of the rise in pay for-performance (P4P), beside a large number of variables can say, contribute to the interpretation of customer satisfaction, including: price, and the way treatment, and provide the service on time while, some study such as considering that the psychological factor is generally critical in the field of specifically health services. In contrast, it disagreed with a study (*Food service in hospital: an indicative model for patient satisfaction* 1982) and (*Rethinking the Quality of Social Services in Europe* 2005) use the quality dimensions, customer confidence, and corporate image perceived as factors explained secret to customer satisfaction for services. Although agreed with other study (*Content analysis of patient complaints* 2004) considers the annual statistical reports that include statistics and digital data to suggest evolution in the size of health facilities and the number of employees and the number of beds and increasing the beneficiaries of those services, but these increases do not necessarily reflect the degree of satisfaction or dissatisfaction with the beneficiaries for the services provided by hospitals and that's what this is aimed Search for study.

As can this study be a springboard for future studies are periodically during which a comparison of results in the satisfaction of beneficiaries and the aspects that have the consent of the beneficiaries of the promotion and evaluation of the amount of improvement, and aspects that do not receive satisfaction for the development and avoid the negatives and look for opportunities for improvement. Thus, these studies (*A conceptual model of Service Quality and its Implication for Future Research* 1985) and (*Measuring the quality of service from the point of view of employees and patients in hospitals*) are one means of assessing the performance of health services, while at

the same time be a way to look for opportunities for improvement and meet them to get to a better .level of year after year

8-RECOMMENDATION:

The competition among hospitals in KSA has become more and more intense, In this competitive environment, The key to maintain good relationships with patients is based on analyzing data related to patient satisfaction, strengthening medical service quality and providing tailor-made service. By doing so, hospitals can develop a more valuable relationship with their patients. These findings drive work planning and work scheduling. The plan can execute in accordance with a well-developed strategy such as outsourcing strategy which involves the delegation of services and operations to others who have the expertise to perform the services more efficiently, cost effectively, and yet maintain the required accepted standard. In reaction to this, health care service providers are seeking outsourcing solutions to fight these growing costs. So ,based on the previous argument between companies I think the manager should choose the second company” Service medical system” Therefore, the best practices are a set of guidelines, ethics, or ideas set forth by required authority that represent the most efficient or prudent course of action . These recommendations will help to improve the competitive position of the hospital.

9-LIMITATIONS:

However, there are some limitations of this study, the study is restricted to one medical /surgical ward in one single hospital, and no other hospitals were included, so the results may not be generalizable to other hospitals. It should also be mentioned here that high percentage of the study population was above 30 years old. Given the predominance of oldest patients in this study, results may not be generalizable to other hospitals’ population. Another weakness of the study is related to measuring food consumption levels, which was not measured in this study.

10-CONCLUSION:

In summary, the majority of patients were satisfied overall with food and food services. Increasing the quality of foods and hospital food services increases the level of overall satisfaction with foods and food services. On the other hand, such studies are very helpful for hospital managers in benchmarking their hospital food services with other competitive hospitals, and make their hospitals different from the others. If a hospital manager does not have information on the situation and

quality of food services in hospital industry, even a manager of hospital serving the worse quality foods and providing food services cannot see the problem. For this main reason, benchmarking the outcomes and practices of your own hospital is an essential step in improving your quality. At this point, one of the questions to be answered is, whether privatization or contracting out hospital food services would result in a high quality and cost-effective manner. However, it is another fact that there is no information on whether the level of satisfaction with food services is increased as a result of contracting food services out or not. For this reason, the level of satisfaction with food services can be investigated at local level as well as national level in both those private and general hospitals .The managers can also use the results of this study in the future to measure or decide whether there is an improvement in the quality of food services.

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