ANALYSIS OF PATIENT SATISFACTION SURVEYS TO IDENTIFY ACTIONS TO ENHANCE THE FOOD SERVICE OPERATION AT THE MENTAL HEALTH HOSPITAL IN TAIF, SAUDI ARABIA

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ABSTRACT

TITLE: Analysis of Patient Satisfaction Surveys to Identify Actions to Enhance the Food Service Operation at the Mental Health Hospital in Taif, Saudi Arabia

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The department of nutrition in the Mental Health Hospital in Taif, Saudi Arabia, is under government control and must follow governmental rules. The patients’ food is prepared by a company that has a contract with the Saudi government, Ministry of Health. The government requires patient satisfaction surveys to be conducted regularly, and summarized monthly, to ensure the foodservice operation is meeting the needs of the patients who live at the Mental Health Hospital. To obtain payment, the contractor must receive an average of 80 percent on a monthly questions patient satisfaction survey regarding food-related issues. The survey questions have never been analyzed individually to identify trends that might indicate areas where a foodservice operation could make changes to improve the patients’ quality of life. The purpose of this study is to analyze the monthly surveys collected for the past twelve months, obtained from both male and female adult wards, question by question, in an effort to identify specific areas where persistent, dietary-related problems exist that could be addressed in an effort to improve the quality of the foodservice operation, and thus the quality of life of the
individuals who must live in the Mental Health Hospital in Taif, Saudi Arabia. Results of this longitudinal analysis indicated that the lowest patient satisfaction score obtained consistently over time related to the employees’ uniform and personal hygiene. Specific suggestions to improve patient satisfaction are provided.
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Identifying patient satisfaction is important to measure the effectiveness of any service (Thind, 2010). In a long term care facility, such as a nursing home or rehabilitation facility, food service providers use patient satisfaction surveys to identify specific areas (e.g., food quality, selection, service, and timing of the meal) that could be improved. To be most useful, however, care must be taken in the development and administration of the instrument (Boyce & Neale, 2006).

According to Fallon, Gurr, Hannah-Jones, & Bauer (2008), using a patient satisfaction survey that only includes a simple “yes/no” answer does not truly measure patient satisfaction with the foodservice. In addition, the methods used to administer the survey (e.g., who asks the questions, who records the responses) and the purpose or intent of the survey (e.g., is the intent to improve service or as a business matter done solely to achieve an objective) can influence the responses and the analysis (Fallon et al., 2008).

While there are many issues that influence a patient’s satisfaction with the services received from a foodservice department that are outside the control of the department personnel, there are many variables under the control of the food service department that can impact a patient’s satisfaction. In most long term care facilities, including the Mental Health Hospital in Taif, Saudi Arabia, the nursing staff plays a
major role determining when the meals can be distributed. Consequently, any delay in allowing the distribution of the meals leads to the rejection of the diet and an increase in patient dissatisfaction. Although Dickson, Welch & Ager (2008) reported that nurses have become less actively involved with mealtimes in recent years, this is not true at the Mental Health Hospital in Taif, Saudi Arabia. As such, maintaining a positive working relationship between foodservice and nursing services is essential to maximize patient satisfaction.

Sharing the results of a patient satisfaction survey with key stakeholders in the departments affected by the survey is necessary in order to address any problems and improve the service (Mitchell, 1999). Interpreting the result assists the department to improve the services by changing some processes and introducing new systems (e.g., HACCP) to aid the process and monitor for any errors expected to occur during food preparation.

In the Mental Health Hospital in Taif, Saudi Arabia, the food and nutrition department is required by the government to implement a survey every day to assess the quality of service provided to the patients in the hospital. The foodservice department has to follow the government’s instructions implicitly or their contract will be terminated. The government requires the foodservice operation to obtain an 80 percent passing rate on the cumulative surveys; if they do not, the foodservice contract will be cancelled. The hospital is required to administer the same survey that has been implemented for years. In addition to not contributing to a real measure of patients’ satisfaction (e.g., the questions require forced answers, such as, “Do you like your meal? Yes/No”) as reported by Fallon, Gurr, Hannah-Jones, & Bauer (2008), the survey results have never been
monitored to identify any trends over time which might indicate areas where a simple change could improve the quality of the service and the food obtained by the patients above the mandatory 80 percent. As such, in an effort to improve the quality of life of the individuals incarcerated in the Mental Health Hospital in Taif, Saudi Arabia, a trend analysis of the five question that address patient satisfaction, and the 11 questions that address the performance of the contractor, is warranted.

**Problem**

The department of nutrition in the Mental Health Hospital in Taif, Saudi Arabia, is under government control and must follow governmental rules. The food provided to the hospitals for the patients is prepared by a company that has a contract with the Saudi government. To be paid, the contractor must receive an average of 80 percent on a monthly patient satisfaction survey regarding food-related issues. The survey results must be submitted to the government monthly. Unfortunately, the patient satisfaction survey is being conducted and interpreted as more of a business matter than a nutritional matter, resulting in the government ignoring most suggestions and feedback about the service to the patients. As a result, the nutrition department is not incentivized or encouraged to address and analyze if there are persistent problems which, if addressed, could improve the quality of life of the residents.

**Purpose**

The purpose of this action research is to analyze the 2010 patient satisfaction survey results for both males and females from the Mental Health Hospital in Taif, Saudi Arabia to determine if persistent dietary-related problems exist that could be addressed in
an effort to improve the quality of life for the patients who, for the most part, will reside their for the remainder of their life. If persistent problems are identified, this researcher, a foodservice employee of the Saudi government, will make specific recommendations for consideration to be implemented upon return to Taif, Saudi Arabia.

**Research Questions**

The following research questions will be examined in this study:

1. Are there any discernible trends in patient satisfaction Mental Health Hospital in Taif, Saudi Arabia, over a period of one year?
2. Are there any discernible trends in patient satisfaction with the contractor at the Mental Health Hospital in Taif, Saudi Arabia, over a period of one-year?
3. Are there any changes under the control of the dietary department that the data suggest could be made in an effort to improve the quality of life of patients who reside at the Mental Health Hospital in Taif, Saudi Arabia?

**Rationale**

This study will give decision makers an opportunity to examine the results of the patient satisfaction survey and determine ways the results could be used to improve the food services provided to the patients who live at the Mental Health Hospital in Taif, Saudi Arabia. By examining the results of the surveys over the past year using a trend analysis, potential issues that could enhance the quality of life of the residents could be addressed, resulting in an overall improvement of services provided to the patients.
Assumptions

The researcher makes the following assumptions in the implementation of the study and in the interpretation of the data:

1. The surveys were filled out by the patient and not by the nurses who were responsible for administering the survey;
2. The questions were understood by the patients;
3. The answers provided by the patients were truthful;
4. The data was entered into the computer system accurately; and
5. The correct data was provided to this researcher.

Definitions

For the purpose of this study, the following definitions will be used:

1. **Mental health** -- a state of person that he or she can realize her or his abilities and cope with daily stresses of life and able to contribute in their community (World Health Organization, 2003)
2. **Mental illness** -- as a “term that refers collectively to all mental disorders, which are health conditions characterized by alterations in thinking, mood, or behavior (or some combination thereof) associated with distress and/or impaired functioning” (Smoyak, p.5 2000)
3. **Patient satisfaction** -- the combination of experiences, expectations and needs perceived (Merkouris, 1999)
Summary

The Saudi government requires that patient satisfaction surveys be conducted daily, and summarized monthly, to ensure the foodservice operation is meeting the needs of the patients who live at the Mental Health Hospital in Taif, Saudi Arabia. The surveys have never been analyzed to determine trends that might indicate areas where a foodservice operation could make changes to improve the quality of life of the patients. This action research project will analyze the food and nutrition department’s government-prepared survey to evaluate trends in patient satisfaction with the foodservice in an attempt to identify areas where simple changes might enhance the lives of those who reside at the Mental Health Hospital.
CHAPTER 2

REVIEW OF LITERATURE

The purpose of this action research is to analyze the patient satisfaction survey results for both males and females, combined, from 2010 from the Mental Health Hospital in Taif, Saudi Arabia to determine if persistent dietary-related problems exist that could be addressed in an effort to improve the quality of life for the patients. This chapter will present a review of the literature that describes: 1) basic human needs and how the absence of certain rights can affect the satisfaction of nutrition services, 2) mental health issues, 3) the impact of mental health on quality of life, 4) patient satisfaction and how it can be measured, 5) a description of the living conditions in the Mental Health Hospital and its impact on the patients who reside therein, and 6) how a food service provider is selected in Saudi Arabia.

Basic Human Needs

Abraham Maslow is one of the most prolific researchers in psychology, sociology, and organizational behavior. Since published in 1943, his Theory of Motivation has become one of the most popular and frequently cited theories of human motivation (Brown & Cullen, 2006). The centerpiece of Maslow’s Theory of Motivation
is the existence of a set of basic human needs that serve as the motivating force for behavior (Seeley, 1992). Maslow categorizes the basic human needs into five general groups: 1) physiological needs, 2) safety needs, 3) belongingness needs, 4) esteem needs, and 5) self-actualization. According to Maslow, physiological requirements are necessary to the physical survival. Maslow provided some examples of physical survival; such needs to oxygen, food, liquid, shelter, sex, and sleep (Seeley, 1992).

In 2009 in central London, a one day conference “Healthy Ageing: The Role of Nutrition and life style” was held to focus on cutting-edge research that impacted the diet and lifestyle of the elderly, including strategies to enhance the quality of life in later years. During the opening session of the conference, it was noted that life expectancy had increased in countries across the world (Rahelu, 2009). Although there has been increasing consciousness of the critical importance that functional ability plays in determining a person’s quality of life, there has not been any positive change in average life expectancy (Stanner & Denny, 2009).

While most of the physiological and safety needs of the residents are available to people in the Mental Health Hospital in Taif, Saudi Arabia, the basic needs of belongingness, esteem, and self-actualization are more difficult to attain as these patients, will most likely spend the remainder of their lives in the facility as these patients are unable to have sex, choose the amount and type of food to consume, or choose how to spend their day. It is important, therefore, to do everything one can to enhance the quality of the patients’ lives through the services and the food they receive on a daily basis.
Mental Health Issues

According to World Health Organization, (World Health Organization, 2010), “mental health” is a state where a person can realize his or her abilities and cope with daily stresses of life and able to contribute in their community. “Mental illness” is defined as a “term that refers collectively to all mental disorders, which are health conditions characterized by alterations in thinking, mood, or behavior (or some combination thereof) associated with distress and/or impaired functioning,” (Smoyak, p.5 2000).

Mental health issues affect people in many countries across the world. Studies showed that depression and anxiety are more common among poorer people than richer people, and depression is more communal among women while suicide is more common among men (Elliott & Masters, 2009). Correspondingly, studies found people who have long-term mental health problems also have poorer physical health compared with those in the general population. These differences are thought to be determined by a person’s economic, social and cultural position in society (Elliott & Masters, 2009). Al Faris and Al Hamid (1995) stated that, in Saudi Arabia, psychiatric illness in primary care is expected at 30-46 percent, with a 19.3 percent prevalence of somatization and 20 percent of depression (Becker, 2002).

Impact of Mental Health on Quality of Life

Mental health impacts one’s quality of life (Bonner, 2002; Schneider, 2002; Katerndahl, 2008). Bonner (2002) found that patients with mental health issues tend to lie to their spouse. They also noted that health, close friendships and happiness with self-
decrease with people who suffer from mental health. Similarly, Schneider, Wooff, Carpenter, Brandon, and McNiven (2002) selected two hundred and sixty users at random from the active caseloads of mental health services in the four districts were interviewed in England to research the associations between service organization and quality of life. The results indicated to that people with mental health issues have fewer close friends than those without mental health issues. Katerndahl, (2008) assessed how mental health affects one’s spiritual quality of life.

El-Badri and Mellsop, (2007) conducted a study to assess the extent to which people with mental illness in a New Zealand setting encounter stigma and discrimination. To examine their satisfaction with quality of life, they invited forty seven males and fifty three females who under the care of a community mental health service to completed questionnaires regarding stigma, discrimination and quality of life. Results of the study indicated people with mental illness were shunned or avoided by others when it was revealed that they had a mental illness. Furthermore, the authors reported most of the participants reflected that their quality of life was unsatisfactory in a number of areas such as relationships with their parents and other family members, also sexual relations as being unsatisfactory.

**Patient Satisfaction**

“Patient Satisfaction” has been defined as the combination of experiences, expectations and needs perceived by an individual (Merkouris, Ifantopoulos, Lanara, & Lemonidou, 1999). According to Wright, Connelly & Capra (2006) observing patient satisfaction with foodservice in the hospitals is one strategy to prevent malnutrition, as
research clearly indicates as patient satisfaction with the food and food service declines, the risk for malnutrition increases. Many factors are associated with patient satisfaction; including food quality contains using high quality of food raw materials, supply the food on time, and maintain the hygienic and safety. This section of the literature review will discuss the impact of food quality and customer service on patient satisfaction.

Hospital patient satisfaction is important to measure the services. Foodservice satisfaction may be infrequently unobserved, as nursing and physician quality are more commonly notorious in the research and observation (Tranter, Gregoire, Fullam, & Lafferty 2009). In 1963 in Wales and England, Platt, Eddy & Pellett conducted an investigation about the quality of hospital food. The survey included 152 hospitals. They point out that “as the size of the hospital increased, the food quality decreased” (Jessri, Mirmiran, Jessri, Johns, Rashidkhani, Amiri, & Azizi. 2011). Quality of food is a wide problem around most hospitals in the world. Jessri,et al., (2011). Tranter, et al., (2009) found a significant relationship with food-quality ratings with patients who stayed in the hospital for long time who typically were very sick.

Measuring Patient Satisfaction using a Survey

There are different factors that researchers depend on to determine patient satisfaction such as the age, socioeconomic status, sex, and educational level. Each hospital has unique characteristics that should take into account when researchers evaluate the patients’ satisfaction (Sitzia & Wood, 1997). There are many reasons that researchers use the satisfaction survey. Researchers may use patient satisfaction to classify areas of clinical nutrition services that need improvement or to determine how
the service affects the length of stay at the hospital as a result of nutrition intervention (Ferguson, 2001).

According to Ferguson (2001), factors that play a major role in determining satisfaction with nutrition services include the patient’s knowledge, past experiences with clinical nutrition services, perceived need for nutrition care, and the quality of the food service that patients predict to receive. Mental Health Hospital in Taif is not a distinctive hospital that uses different style to measure the patients’ satisfaction. Because nursing services play a major role in patient satisfaction, quality of care, and safety (Ford, 2010) having a good relationship among the staff and nurses will reflect patients’ experiences about the services (Malins, 2006).

The nutrition department at the Mental Hospital in Taif depends on the nursing station on each ward in the hospital to evaluate the food and service that is provided to the patients by the department. The nutrition department tries to use the outcome of the survey to investigate the issues that may make the service un-satisfactory and work to make changes that increase the quality of the service. However, that will not happen unless the department notices low scores on the survey which indicate a problem that needs to be addressed. Recently, the consequences from the daily random survey led the department to implement Hazard Analysis Critical Control Points system (HACCP) to reduce and anticipate any error that may occur during food preparation. The department uses the system specials for food preparation for patients who are not able to consume their meals such as elderly patients and those who are under liquid diet. For this kind of food the nutrition department usually uses items to mix them in a blender in a particular room in the hospital kitchen. The biggest challenge to improving the service by using this
system is not under the food and nutrition department’s control, such as the old building that is unprepared to enforce this system.

Some factors are under control, such as training the staff to improve their skills. As some researchers indicated in studies that evaluate the implementation of the HACCP system, using the HACCP system will assist to reduce and eliminate any error that may affect the quality of nutrition service at the hospital even though implementing this system costs a lot of money and requires specific material, such as the tools that are used to prepare food and some issues related to building, such as the location and construction (Oliveira, 2001).

**Selecting a Foodservice Company**

Choosing a corporation to provide food and nutrition service for patients in Saudi’s hospitals is not an easy issue that can be easily discussed as many factors that are interrelated and interwoven. There are many government agencies, in addition to the ministry of health, that work together to select appropriate company that is interested in providing the service. The reputation and experience in providing nutrition services is one of the conditions that the company should have. Moreover, there are a lot of conditions that are not related to the food and nutrition service, such as a commercial registry and company bank accounts that are involved in the decision-making process.

The main goal for any company that provides the food and a nutrition service is profit. One of these companies provides the food and nutrition service for Mental Health in Taif, it is looking for getting all the money that is assigned for the contract so, it works to reduce the spending by using materials that have low quality or sometimes refusing to
use certain kinds of food because it costs more than the company accepts. The company is always working to provide better services and that fit the price set by the service and often this service is under negotiation.

**Living Condition in Saudi Arabia**

According to World Health Organization p. 137 (2008), studies in Saudi Arabia have revealed low detection rates for mental disorders. In the city of Al-Khobar, 22 percent of health clinic patients had mental disorders such as depression and anxiety however only 8 percent were diagnosed. In Riyadh, 30 to 40 percent of those seen in primary care clinics had mental disorders and again, most were not diagnosed. In central Saudi Arabia, 18 percent of adults were found to have minor mental morbidity. Rates were higher among the young (15–29 years, 23%), divorced people and widows (more than 40%). Suicides have been estimated to occur at a rate of 1.1/100 000 population per annum, and to be most common among men, people aged 30 to 39 years, and immigrants. Psychiatric hospitalizations occur in a range of settings as follows:

- The main psychiatric hospital in Saudi Arabia, Taif Hospital: 570 beds;
- Other psychiatric hospitals (14 total): 30–120 beds each;
- Psychiatric departments and clinics attached to general hospitals (61 total): 20–30 beds each;
- Hospitals for treatment of alcohol or drug dependence (3 total); 280 beds each;
- Military, National Guard and university hospitals: 165 beds total;
- General Private Hospitals for psychiatric care: 146 beds total.
Rehabilitation services are concentrated mainly in the private and nongovernmental organization sector. Criminals with mental disorders are treated in secure units in Taif hospital and certain other hospital.

One can only imagine how a patient feels when she or he is inpatient to the hospital and has a high probability that she or he will not be outside of the hospital's fence ever again, not because she or he will not recover quickly, but because of the “community vision.” In fact, the characteristics of the Saudi society such as the fact that some families feel ashamed about having a person with a disability and as a result, tend to avoid to talk to people about having a member of their family has a disability or mental illness or participation in such research (Al-Shehri, Farahat, Hassan, & Abdel-Fattah, 2008). In addition to that a survey of mental health inpatients, The Care Quality Commission Survey, included 7500 inpatients. The results indicate that more than half of the patients felt unsafe during their admission (Mental Health, 2009). Most patients at Taif hospital stay at the hospital for a long period of time after they recover from the original condition that caused their hospitalization as most families refuse to allow the person diagnosed with a mental illness to return to their home due to their shame and their fear that their family member’s condition will result in a reduction of their social status.

It is hard in Saudi society to accept a person who has or had a mental health issue. A study conducted by Depla, Graaf, Weeghel & Heeren (2005), indirectly supports this theory. The authors stated that most people who worry about stigmatization tend to be more isolated and rejected. For that reason, the Mental Hospital has a “secret ward” where the patients’ name is unidentified in the records. Even after the physician tells the
patient he or she is well and needs to leave the hospital, most patients stay at the hospital without discharge because routine procedures require taking permission from their family to leave the hospital – and most families refuse to sign their permission.

The depression that results from being rejected by their family causes many patients to refuse to eat their meals which lead to a setback for the health status. The hospital tries to cope with this kind of problem by providing different activities in an effort to engage the patients. The food department tries to help the patients eat their meals by changing the daily routine, such as providing the meals family style rather than in a single tray brought to the bedside. This provides one large dish and every individual eats the meal directly from the dish and shares with the other patients. Although this seems like a progressive idea, the department faces a problem with this because some patients do not consume or meet the daily recommended intake. This family style method of feeding the patients can also avoid the problem of patients stealing food from other patients, which is eaten or thrown out for fun.

It is hard to provide satisfactory meals for patients staying at the hospital for a long time, especially when a cycle menu becomes memorized. Some patients ask the nutrition department to increase the amount of lunch, for example, if they know they do not like what is going to be provided at dinner. Sometimes, it is difficult to decide whether or not to change items to please the patient because the department is required to follow the daily menu so as not to affect the company budget. The hospital’s contract indicates to that the nutrition department has the ability to choose and change each individual item such as the kind of vegetables and fruits, yet there is a condition that
always limits the department choosing which price should stay in the range and not affect company that provide the service.

**Summary**

Many factors affect patient satisfaction with the food and foodservice provided in a long-term care facility. Of these, some are under the control of the foodservice department and some factors are outside the control of the department. Any action that can improve patient satisfaction – and thus the quality of life of the individuals who find themselves permanently residing in a Mental Hospital – should be pursued. Examining patient satisfaction surveys to identify specific actions that could be taken to improve the patients’ quality of life is warranted.
CHAPTER THREE

METHODOLOGY

The purpose of this action research is to analyze the patient satisfaction survey results for both males and females from the Mental Health Hospital in Taif, Saudi Arabia, question by question for the year 2010, to determine if persistent dietary-related problems exist that could be addressed in an effort to improve the quality of life for the patients. This chapter will describe the methods used to conduct the study.

Institutional Review Board

This action research involves the post-hoc analysis of previously collected patient satisfaction data from the Mental Health Hospital in Taif, Saudi Arabia. Per the director of the Institutional Review Board at Ball State University, this study does not meet the definition of Human Subjects (HS) research as defined in the Federal regulations and, as such, no IRB review is needed (Appendix A-1). Nonetheless, the researcher completed the Collaborative Institutional Training Initiative (CITI) (Appendix A-2).

Subjects

The data being analyzed in this action research project was compiled from the daily survey results that were obtained from a convenience sample of all patients in the
Mental Health Hospital in Taif, Saudi Arabia, from January 1, 2010 through December 31, 2010. Survey results were obtained from both male and female adults (435 men, 135 women) 30 years of age and older. Patients who were in coma, tube fed or who lived in ward two (the “jail ward” and the “secret ward”) were not surveyed and are not included in the study.

**Instruments**

The Patient Satisfaction Survey (Appendix B) is provided to the food and nutrition department at the Mental Health Hospital in Taif, Saudi Arabia by the Saudi government. The survey asks five questions about the patient’s satisfaction with meals and eleven questions about the services provided by the contractor who provides the meals. The five patient satisfaction questions ask about: 1) the food quality (e.g., are hot foods hot and cold foods cold, 2) the taste and appearance of the meals), 3) the timeliness of the meal service (delivery and pick-up of trays), 4) the diversification of the meal by season, and 5) whether or not the food server wore their name tag and maintained personal hygiene (e.g., fingernails, hair, hair covering, no open wounds on the hands and arms), and the use of appropriate cooking techniques. Unfortunately the fifth patient satisfaction question actually combines two constructs (e.g., hygiene and appropriate cooking techniques), confounding the results and making it difficult to determine which of the two constructs is actually being evaluated by the patient.

Several additional questions address the hospital staff’s satisfaction with the food contractor relate to the quality of the raw materials used to prepare the food, the timeliness of the meal service, the use of local food, availability of adequate staffing to
provide the services needed, the contractor’s commitment to hiring Saudi workers, and the completion of academic degrees and certification of health by all workers.

**Letter of Permission (or Consent)**

Permission was granted from The Ministry of Health of Saudi Arabia to obtain and analyze the monthly summary of the food service surveys for this study. The letter was deleted from this research paper to ensure the safety of the electronic signature.

**Methods**

A patient satisfaction survey (Appendix B) is provided to the food and nutrition department at the Mental Health Hospital in Taif, Saudi Arabia, by the Saudi government. The survey is copied and distributed to each ward. Each staff member in the food and nutrition department is responsible for a specific ward to ensure the nursing staff gives the survey to the patients on their ward as required by the government. Seven nutritionist, three of whom are female, work in the foodservice department at the Mental Health Hospital. The three female nutritionists must work in the wards for females (i.e., the wards are separated by gender, females not allowed to enter the ward where males are located). Each nutritionist is required to complete a survey about the service and food each day to make sure there were no problems that needed to be solved immediately, such as missing a meal.

There are seventeen wards at the hospital, with each ward containing approximately 35 beds. All of the food is prepared in the hospital kitchens and delivered to individual wards where it is reheated in a heating container. Each ward has a small
kitchen with dining room. At mealtimes a distribution worker delivers a trolley containing the meals to the ward’s kitchen. The nurses are responsible for serving the food to the patients and provide assistance when required. At the end of the meal, the distribution workers collect the plates.

Every day the ward nurses randomly select patients to complete the patient satisfaction survey (Appendix B). The nurses read the questions to each patient and record their responses. The foodservice supervisor conducts a cursory review of the results to determine if there are any problems that need to be immediately addressed. If there is an issue with the service or with the food, the department receives a note by phone from the wards. The surveys are then presented to a ward clerk who is responsible for entering the data into an Excel program for analysis. At the end of each month, a monthly summary is presented to the government.

The foodservice supervisor is responsible for accumulating a monthly average for each of the questions asked on the patient satisfaction survey. Each day it requires generating a random survey for every ward in the hospital, with a minimum of three surveys for each ward. At the end of every work day at least forty five questionnaires were completed by the randomly selected patients. Each staff member in the foodservice department is responsible for specific certain wards. The surveys for the five wards for the female patients are conducted by three women.

The survey included five questions related to the patients’ satisfaction with the food and 11 questions related to the performance of the contractor. The patients were asked to rate each question using a five-point Likert scale where a response of “5” indicates the highest rating and a response of “1” indicates the lowest rating.
After the surveys are collected, a mean score is calculated for each item using the following four step process:

1. The score for each “measure point” from every patient is summed (e.g., if there were 200 patients and 180 ranked the quality of the meal as satisfactory or a “5” and 20 patients ranked the quality of the meal as a “4”, the total points for that day for that question would be 980);

2. The summed score is divided by the number of patients who responded (e.g., 980/200 = 4.9) to calculate a mean daily score;

3. Repeat for each day, summing the daily score over 28-31 days (depending on the month);

4. Divide the total summed score by the number of days in the month.

Data Analysis

The monthly data for each question on the Patient Satisfaction Survey was entered into Microsoft Excel. Descriptive statistics were run to determine the percent who respond to each question. A trend analysis for each question was run using the statistical functions in Microsoft Excel in an effort to identify any question that consistently has a low score. Similar questions were grouped together on one graph to show the interrelatedness between the variables. The raw data can be found in Appendix C1 and C2.

Summary

Patient satisfaction with the foodservice operation at the Mental Health Hospital in Taif is mandated to be conducted daily, with weekly and monthly summaries used by
the government to determine if the foodservice contract will be retained. If an eighty percent satisfaction rate is obtained, the government is content with the foodservice contractor. Other than ensuring an overall approval of 80 percent is attained, no additional trend analysis has been conducted to identify if any other actions might be taken by the foodservice department to improve the quality of life of the patients at the hospital who are there for the extent of their life. The purpose of this project was to analyze the patient satisfaction data from 2010 to identify any actions that could be taken to improve the quality of life of the patients within the current constraints of the government.
CHAPTER 4

RESULTS AND DISCUSSION

The purpose of this action research is to analyze the patient satisfaction survey results obtained from the Mental Health Hospital in Taif, Saudi Arabia, question by question for the year 2010, to determine if persistent dietary-related problems exist that could be addressed in an effort to improve the quality of life for the patients. This chapter will describe and discuss the results obtained when the data was analyzed.

**Patient Satisfaction with Meal Service**

Overall, the mean patient satisfaction ratings of the 510 patients who lived in the Mental Health Hospital in Taif, Saudi Arabia, throughout 2010 indicated a very high level of satisfaction with the quality of the meal (4.9 ± 0.3), the timeliness of the meal service (4.9± 0.3), the diversification of the meal by season (4.9 ± 0.3), and the use of appropriate cooking methods (4.8 ± 0.4). Each of these constructs was scored extremely high by the patients at the Mental Health Hospital in Taif, Saudi Arabia. The lowest mean score was obtained for the construct “Employee in Uniform and Personal Hygiene” (4.07 ± 0.29) (Table 1).
Table 1. Mean Patient Satisfaction Accumulated Over Twelve Months (n=570).

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<tr>
<td>Provide Meals on Time</td>
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<tr>
<td>Diversification of Meal by Season</td>
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<tr>
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<td>4.07 ± 0.29</td>
</tr>
<tr>
<td>Appropriate Cooking Methods Used</td>
<td>4.83 ± 0.39</td>
</tr>
</tbody>
</table>

\(^1\)Quality of meals includes taste, appearance and degree of heat.

Quality of Meals

The monthly ratings describing the patients’ satisfaction with the quality of the meals served throughout 2010 are shown in Figure 1. Overall, except for October, the data indicates patients gave positive ratings, indicating satisfaction with the quality of the meals served by the Nutrition Department at the Mental Health Hospital. (Figure1).

![Quality of the meals](image)

*Figure 1. Monthly Mean Satisfaction Score: Quality of the Meals Served.*
Provide Meals on Time

The data in Figure 2 indicates that, despite the challenge of making the meals arrive to the patients on time, the nutrition department appeared to work very well. The hospital is large and contains many the buildings in different places far from the kitchen, making meal delivery quite challenging. The expansion of some buildings and the creation of new buildings without an expansion in the kitchen make it difficult to deliver the meals on time for all patients. Some buildings actually require the use of vehicles to transport meals. In November of each year, millions of Muslims come to Mecca, Saudi Arabia, for pilgrimage. Most of the employees of the Mental Health Hospital are Muslim and they like to visit Mecca for the pilgrimage, making it difficult to attain an adequate number of staff which can affect the delivery of the meals (Figure 2).

![Graph showing satisfaction score for provide meals on time]

*Figure 2. Monthly Mean Satisfaction Score: Provide Meals on Time*

Diversification of Meals by Season

Most individuals, no matter what their lot in life, prefer a wide choice of food to eat. The data in Figure 3 demonstrates that, for the most part, patients at the Mental
Health Hospital perceive that the foodservice department offers a wide variety of meal by season. Saudi Arabia, like most countries, has different kinds of foods available during each season. The lowest monthly rating was obtained in January when the variety of fresh local foods tends to be at the lowest level.

![Diversification of Meal by Season](image)

*Figure 3. Monthly Mean Satisfaction Score: Diversification of Meal by Season*

**Employee in Uniform and Personal Hygiene**

The annual mean score for patient satisfaction with the employees’ proper dress and maintenance of a high level of personal hygiene was $4.07 \pm 0.29$, the lowest of all monthly mean scores related to the food and its service (Figure 4). Figure 4 indicates the patients consistently scored this construct the lowest. As such, making attempts to encourage personal hygiene and assuring employees wear the proper attire may, in fact, enhance the satisfaction of patients who live at the Mental Health Hospital in Taif, Saudi Arabia.
There are, however, two constructs being asked in one question, making it difficult to discern which construct (e.g., the employees in uniform or personal hygiene) is perceived as being problematic by the patients. As such, one recommendation would be to separate this question into two unique questions. The employee may wear clean clothes and he or she may be in excellent shape, yet if his or her fingernails are dirty, that definitely will affect the patients’ satisfaction. A second issue might be the lack of control and commitment of workers. For example, if the worker does not cover his or her mouth during serving the meal, if they wear jewelry, or if they fail to change their disposable gloves regularly, that will affect the results. At present, which of these issues is problematic cannot be discerned as the question is currently written. Nonetheless, these results indicate the foodservice director at the Mental Health Hospital should encourage all workers to be continuously trained in safe food practices and to maintain a high standard of personal hygiene and hygiene (Figure 4).
Appropriate Cooking Methods Used

The nutrition department tries to meet both the required nutritional needs of the patients as well as to make the meal time a time of happiness and joy for the patients who live at the Mental Health Hospital. The results from the survey indicate the patients appear to be happy with the type of food prepared by the department (Figure 5). Except for the end of the year when, as mentioned previously, the department often lacks enough employees due to the pilgrimage season that affects the results. The nutrition department strives to meet every patient’s individual dietary requests and desires when they do not conflict with their health needs or instructions the physician.

![Appropriate Cooking Methods Used](image)

*Figure 5. Monthly Mean Satisfaction Score: Appropriate Cooking Methods Used*

Satisfaction with the Foodservice Contractor’s Performance

The next several survey questions are business-related questions that are answered by the hospital staff about the foodservice contractor’s performance. From a business point of view, these questions are of greatest concern to the Saudi Ministry of Health
because if the monthly “score” for any of these questions is rated lower than 80 percent, the foodservice contractor will be financially penalized. These questions are answered daily by the nursing staff, nutrition department staff, and head of the quality assurance department. The questions are then analyzed monthly by the head of the hospital. The eleven questions relate to: 1) The quality of food raw materials, 2) Supply of food at the time, 3) Use of food produced locally, 4) Completion of employment, 5) Commitment to employ Saudis, 6) Completion of academic degrees and certification of health, 7) Obligation to pay salary of employment, 8) Company’s commitment to provide insurance cash, 9) Compete appliance and equipment, 10) Safety equipment and do maintenance, and 11) Compliance with clean equipment, floors and organize food stores.

**Quality of Food Raw Materials**

Figure 6 indicates that the committee, including the nursing staff, nutrition department staff, and head of the quality assurance department, rated the quality of raw materials used during 2010 as somewhat unstable, with the monthly means varying between a score of four (six months or 50% of the year) and five (six months or 50% of the year) throughout the year. One potential explanation for this variation includes an inadequate number of employees in the nutrition department, making the job of inspecting all of the food that was ordered and received too overwhelming. This could result in the purchase of lower-quality foods that would have been rejected had there been an adequate staff. A second possible explanation might be the need for clearer standards which, if available, may contribute to the selection of materials of higher quality (Figure 6).
Supply of Food

The monthly committee satisfaction scores for the construct “Adequate supply of food” were quite variable, ranging from a low of four (four of the 12 months) to a high of 5 (eight of the 12 months). Overall, however, the committee appears to be satisfied with the supply of foods available to them for consumption (Figure 7).
Use of Locally Produced Food

The mean score for the construct “food produced locally” tends to be lower than other questions, with the mean score near 4.0 for every month except one. This low score most likely reflects the fact that some products enjoyed by the residents (e.g., certain regional fruits, a specific type of imported rice used for main dishes) are simply not available locally (Figure 8). In other words, some primary foods preferred by the residents are not locally produced, making the results from this question somewhat misleading. As such, this researcher suggests this question be removed from the survey.

![Use of food produced locally](image)

*Figure 8. Monthly Mean Satisfaction Score: Use of Food Produced Locally*

Completion of Employment

The responses to the question about the completion of employment indicated a lack of workers at the department, which negatively affected service performance. The number of workers in the department at the Mental Health Hospital tends to be lower
than what would be found in a standard hospital in Saudi Arabia, possibly explaining the variations in performance see in Figure 9.

![Completion of Employment](image)

*Figure 9. Monthly Mean Satisfaction Score: Completion of Employment*

**Commitment to Employ Saudis**

The data in Figure 10 indicates the responses throughout 2010 regarding the question about the contractor’s commitment to employ Saudi’s in the food service operations. The data indicates that, in the eyes of the respondents, the contractor was committed to hiring Saudis which leads to obtain a high level of satisfaction among the patients at the Mental Health Hospital. In August, however, there was a reduction in satisfaction as the contractor failed to maintain the required number of employees after the summer season (Figure 10).
Completion of Academic Degrees and Certification of Health

Untrained employees contribute negatively to service. On the other hand, lack of health certificates to prove that workers are qualified to work must be an important aspect to focus on to maintain patient safety (Figure 11). Although this point is not linked with the patient, it is very important to find out why patient satisfaction in some aspects of service performance is not perfect.
**Obligation to Pay Salary of Employment**

The Saudi government has strong rules to make sure all companies provide the salary to their worker on time and this is one of the many requires to company's financial dues. This is very important to create the motivation to work and make the service faultless (Figure 12).

![Obligation to pay salary of employment](image)

*Figure 12. Monthly Mean Satisfaction Score: Obligation to Pay Salary of Employment*

**Company’s Commitment to Provide Insurance Cash**

One of the questions included on the survey is the contractor’s commitment to provide insurance cash. It is the opinion of this researcher that this point should not be included in the evaluation because the government is not allowed to let any company start work in any hospital until they provide a letter from the hospital showing that the company deposit money for the hospital, making this question meaningless. In addition, as this question is weighted the same as all other questions, obtaining a “5” on this question will raise the overall mean score, aiding in the assurance that the contractor will not lose their job, even if they scored lower on several other constructs measured in the
satisfaction survey. It very important for the department to have cash to face any emergency such as provide specific food for the patients when the company unable to afford it on time (Figure 13).

![Company’s commitment to provide insurance cash](image)

*Figure 13. Company’s Commitment to Provide Insurance Cash*

**Complete Appliance and Equipment**

Data from the survey indicates each contractor is eager to deliver all appliance and equipment listed in the contract to avoid any penalty or fee. The contractor who served the hospital in 2001 appeared to provide adequate service (Figure 14).

![Complete appliance and equipment](image)

*Figure 14. Monthly Mean Satisfaction Score: Complete Appliance and Equipment*
Safety Equipment and Maintenance

Working in mental hospital is not easy job, not only for individuals but also for companies. Each ward in the Mental Health Hospital has a dining room, a small kitchen, and a dining room with tables and chairs. Some of the wards require tables made from plastics and some of them require tables made from strong material installed in the floor. When any equipment needs to replace the company need to do it immediately to maintain the safety. Figure 15 indicates the monthly mean satisfaction with the safety equipment and maintenance done by the contractor is lower than one might desire (Figure15).

![Safety equipment and do maintenance](Image)

*Figure 15: Monthly Mean Satisfaction Score: Safety Equipment and Maintenance*

Clean Equipment, Floors and Organized Food Stores

As shown in Figure 16, during 2010 the service provider had the same evaluation of satisfaction and the score, although not perfect, was stable. It is apparent from this graph the workers needed to come into more training to maintain a higher level of facility’s hygiene. This is associated with the indicator completion of academic degrees and certification of health (Figure 16).
**Overall Food Quality**

When three constructs associated with overall food were examined together, the data indicates the quality appears to be acceptable, in spite of the great challenges facing the department of nutrition. The success of the overall quality can be attributed to the cooperation between the department and nursing and the effort by the department to achieve patient’s wishes with recommended varieties. On the other hand, the chart shows the fluctuation in the quality of raw materials, most likely due to the need for staff training (Figure 17).
Overall Human Resources

When two human resource-related questions were examined together, the results indicate that lack of workers contributes significantly to low levels of service. The number of employees is not compatible with a number of patients, which captured a burden on the workers and the department to reach a satisfactory level (Figure 18).

![Figure 18: Combined Satisfaction with Human Resource](image)

Overall Production

It can be seen from the data in Figure 19 that the quality of the meal was unchanging except during pilgrimage season. Providing meals on time was acceptable. The contractor was provided a wide variety of food by season. When winter season started, it seems they faced some problems due to lack of availability of fruits and vegetables such as oranges without seeds. The issue that should be addressed here is the committee of workers should cover the head and wear gloves to be satisfactory in front of the patients (Figure 19).
Figure 19: Combined Satisfaction with Production.

Data Driven Suggestions for Improvement: Patient Satisfaction

Analysis of the data indicated there are several changes under the control of the dietary department that could be made in an effort to improve the quality of life of patients at the Mental Health Hospital in Taif, Saudi Arabia. These suggestions are derived from the first five questions on the survey (Appendix B). The following changes are suggested:

1. The department is encouraged to review how they follow up the procedure of HACCP to address any error that did not urge workers to follow the rules of personal hygiene and wearing the uniform.

2. The department has a duty to ask the service provider to create sessions for health education and make health education sessions one of the requirements to accept the employees in the facility. This researcher suggests that the health-related presentations be given to all employees.
Data Driven Suggestions for Improvement: Business Perspective

Analysis of the data indicated there are several changes under the control of the dietary department that could be made in an effort to improve the quality of service provided by the food service contractor at the Mental Health Hospital in Taif, Saudi Arabia. These suggestions are derived from the last eleven questions on the survey (Appendix B). The following changes are suggested:

1. The department of nutrition in the hospital should discuss the number of employees with the provider and the Ministry of Health annually to make sure the number of workers is fit the numbers of the patients. Reviewing the contract will be helpful to increase the quality of service in this point. The department of nutrition in the hospital should benefits of the contract to enhance the quality such as announcement of careers to maintain the standard of employees.

2. The department ought to review how the department follows up the procedure of HACCP to address any error that did not urge to follow the rules. Furthermore, the department has a duty to ask the service provider to create sessions for health education and make health education sessions one of the requirements to accept the employees in the facility.

Discussion

Overall, the results of the patient satisfaction survey and the human resource-related questions indicate compliance with minimum expectations. However, several suggestions, if implemented, could enhance the performance of the contractor while
improving the quality of life for those residing in the Mental Health Hospital in Taif, Saudi Arabia.

Having an adequate number of employees, for example, is critical to the success of any department (Jessri et al., 2011). Survey results in the present study indicate the number of employees often did not fit the number of the patients in the hospital which appears to have affected the level of service provided by the contractor and put the contractor at risk of not complying with Saudi health Ministry standards. The findings of this study are in agreement with the observation of Ford (2010) and Malins (2006), the quality of service often decreases as the size of hospitals increases. The number of workers who provide the food service to patients is extremely important because without adequate help, the meals will not be served on time.

A second issue that seemingly impacts the satisfaction with the Mental Health Hospital is safety. Safety is an issue in any facility, but in mental hospitals this concern is more pressingly due to patient’s status. Results accumulated over 2010 indicated the provider did not meet the requirement of the maintenance of equipment, leading to an environment that was not deemed completely safe. This finding agrees with research done before the point out that patients feel unsafe inside the mental facilities.

One unanticipated finding from the patient satisfaction survey was that, even though HACCP is one of the affect programs that increase the quality as research mention, the outcome of the employee’s uniform and personal hygiene increase but affected the quality of service negatively.
Summary

Attaining a high level of quality service in large facility is problematic and requires continuous quality assurance. To aid in achieving this objective, feedback is obtained from patients through a satisfaction survey. Results indicate the patients have an overall positive view of the food service at the Mental Health Hospital in Taif, Saudi Arabia with the exception of the employee’s uniform and personal hygiene. Similarly, the hospital staff appears to be satisfied with the human-resources aspect of the contractor that provided service to the hospital throughout 2010, with the exception of several months when staffing appeared to be limited.
CHAPTER V

CONCLUSION, LIMITATIONS, AND FUTURE RESEARCH

The purpose of this action research is to analyze the patient satisfaction survey results for both males and females from the Mental Health Hospital in Taif, Saudi Arabia, question by question for the year 2010, to determine if persistent dietary-related problems exist that could be addressed in an effort to improve the quality of life for the patients. This researcher’s conclusion, the limitations of this study, and potential ideas for future research will be described in this chapter.

Conclusion

The results of this study indicated the instrument of the research specially some points of the questions should review for developing a good question that support to measure the area of patients’ satisfaction. For instance, there was a question asked the patients about two separate sides such as about personal hygiene and commitment to the custom dress, such as the color of the clothing. Most of the time, when patients evaluated the employees, they found the workers had good personal hygiene, but some of them were not committed to the dress code allocated to them. Because of this, there may be
some confusion about the evaluation patients have to give him or her. In other words, a high score due to the personal hygiene, but a low score because of the uniforms, leaves ambiguity in the total evaluation. In addition to the instrument, I believe there were some issues that need to be improved to make the evaluation closer to the reality of opinion and to measure the service to improve the patients’ satisfaction.

Limitations of the Study

As the reader examines the results of this study, several limitations must be considered:

- Only the monthly cumulative data for each question was obtained from the current food service director of the Mental Hospital in Taif, Saudi Arabia.
- The research was not specifically designed to evaluate factors related to the patients and that was the main weakness of this study.
- Gathering the data was one of weaknesses in this study which could affect the measurements of patient’s satisfaction.

Recommendations for Further Research

Based on the results of the present study, the following suggestions are made for future research:

- It is recommended that further research be done with focus on some issues that affect the results. First, for future research, researchers should focus on how to contact the patient to measure their satisfaction since the consequences will depend on who communicates with patients. Previous studies showed that
patients’ satisfaction will be at a high level when asked by nurses while the results will vary when questioned by other persons. Researchers should know which patients can read and write and then elect them at random to be the sample so that nurse interaction is not necessary. It would be interesting to compare the results of patient satisfaction done by a person from foodservice within the same group asked by nurses.

- It will be a good idea to divide the samples by gender to see if there is a difference between male and female trend for food services. Also, in the same gender such as male, it would be interesting to study the level of satisfaction between young patients and middle aged patients.

- Choose a good time for the patients and people who provide the service to conduct the survey about the food service because timing may play an important role and affect the results. For example, some patients who complete the survey after the service is finished, when asked about the employees’ uniform the patient will forget how the uniform was so he or she will give the wrong information.
REFERENCES


APPENDIX A

Institutional Review Board Documents

A-1 Email Communication from Institutional Review Board

A-2 CITI Certificate of Completion
From: Mangelli, Christopher M.
Sent: Monday, October 10, 2011 11:51 AM
To: Friesen, Carol A., Aljaziri, Salman H.
Subject: RE: IRB Question about Student proposal (Salman Aljaziri)

Dr. Friesen and Mr. Salman Aljaziri

At this point, and based on what you has been described below, the proposed project does not sound like it is Human Subjects (HS) Research as defined in the Federal regulations. As such no IRB review is needed.

I understand the cultural context in this case having been stationed there. Cultural context aside though, this looks like it is a quality improvement project as opposed to a human subjects research one. Should the goal(s) of this project change (such as doing comparison and contrasting with other agencies for example) or the PI decides he wants to conduct HS research, then please let us know as this analysis could change.

If you have any other questions or need more information, please let me know.

Christopher M. Mangelli
JD, MS, M. Ed, CIP
Director, Office of Research Integrity
Ball State University
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Muncie, IN 47306
O: 765-285-5070
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cmmangelli@bsu.edu
http://cms.bsu.edu/About/AdministrativeOffices/SPO/ResearchIntegrity.aspx
Appendix A-2

CITI Collaborative Institutional Training Initiative (CITI)

RCR FOR SOCIAL, BEHAVIORAL & EDUCATIONAL RESEARCHERS Curriculum Completion Report
Printed on 11/7/2011

Learner: Salman Aljaziri (username: salman1398)
Institution: Ball State University
Contact Information
  Department: FCSFN
  Email: salman.1398@hotmail.com

RCR FOR SOCIAL, BEHAVIORAL & EDUCATIONAL RESEARCHERS: This course is for investigators, staff and students with an interest or focus in Social and Behavioral research. This course contains text, embedded case studies AND quizzes.

Stage 1. RCR Passed on 06/05/11 (Ref # 6059820)

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For this Completion Report to be valid, the learner listed above must be affiliated with a CITI participating institution. Falsified information and unauthorized use of the CITI course site is unethical, and may be considered scientific misconduct by your institution.

Paul Braunschweiger Ph.D.
Professor, University of Miami
Director Office of Research Education
CITI Course Coordinator
APPENDIX B

Patient Satisfaction Survey
Patient and Contractor Survey (Translated from Arabic)

Patient Questions

1. How would you rate the quality of the meal (taste, appearance, temperature)?
   - [ ] Excellent
   - [ ] Very good
   - [ ] Neutral
   - [ ] Good
   - [ ] Bad

2. Do you receive your meals on time?
   - [ ] Excellent
   - [ ] Very good
   - [ ] Neutral
   - [ ] Good
   - [ ] Bad

3. How do you feel about the diversification of the meals by season?
   - [ ] Excellent
   - [ ] Very good
   - [ ] Neutral
   - [ ] Good
   - [ ] Bad

4. How do you rate the employees’ personal hygiene and compliance with the uniform code?
   - [ ] Excellent
   - [ ] Very good
   - [ ] Neutral
   - [ ] Good
   - [ ] Bad

5. How would you rate the meals in terms of the preparation methods used to cook the food?

Questions about the Contractor

1. How would you rate the quality of the raw food materials?
   - [ ] Excellent
   - [ ] Very good
   - [ ] Neutral
   - [ ] Good
   - [ ] Bad

2. How would you rate the supply of food received?
   - [ ] Excellent
   - [ ] Very good
   - [ ] Neutral
   - [ ] Good
   - [ ] Bad

3. How do you feel about the amount of food used that is produced locally?
   - [ ] Excellent
   - [ ] Very good
   - [ ] Neutral
   - [ ] Good
   - [ ] Bad

4. Are there enough workers in your ward?
   - [ ] Almost always
   - [ ] Sometimes
   - [ ] Not much
   - [ ] Rarely
   - [ ] Never
5. Do you believe the contractor is committed to hiring Saudi employees?
   - [ ] Very Much
   - [ ] Somewhat
   - [ ] Neutral
   - [ ] Rarely
   - [ ] Not at all

6. Does the contractor hire people who have completed their professional degrees and certificate of health?
   - [ ] Always
   - [ ] Almost Always
   - [ ] Sometimes
   - [ ] Rarely
   - [ ] Never

7. Does the contractor pay the employees in a timely manner?
   - [ ] Always
   - [ ] Almost Always
   - [ ] Sometimes
   - [ ] Rarely
   - [ ] Never

8. Does the contractor provide insurance cash to the hospital as required?
   - [ ] Always
   - [ ] Almost Always
   - [ ] Sometimes
   - [ ] Rarely
   - [ ] Never

9. What is your opinion of this statement? "Your ward has enough equipment."
   - [ ] Always
   - [ ] Almost Always
   - [ ] Sometimes
   - [ ] Rarely
   - [ ] Never

10. The contractor provides safe equipment and conducts regular maintenance?
    - [ ] Always
    - [ ] Almost Always
    - [ ] Sometimes
    - [ ] Rarely
    - [ ] Never

11. Does the contractor clean/maintain the equipment, floors, and storage area?
    - [ ] Always
    - [ ] Almost Always
    - [ ] Sometimes
    - [ ] Rarely
    - [ ] Never
APPENDIX C

Raw Data

C-1  Patient Satisfaction with Food and Service

C-2  Patient Satisfaction with Food Service Contractor
## Mean Measuring Points for Patient Satisfaction with the Food and Food Service

<table>
<thead>
<tr>
<th>Measure Points</th>
<th>JAN</th>
<th>FEB</th>
<th>MAR</th>
<th>APR</th>
<th>MAY</th>
<th>JUN</th>
<th>JUL</th>
<th>AUG</th>
<th>SEP</th>
<th>OCT</th>
<th>NOV</th>
<th>DEC</th>
<th>Range</th>
<th>Mean</th>
<th>Median</th>
<th>SD</th>
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<td>5.0</td>
<td>5.0</td>
<td>5.0</td>
<td>5.0</td>
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<td>5.0</td>
<td>5.0</td>
<td>4.0</td>
<td>5.0</td>
<td>5.0</td>
<td>5.0</td>
<td>1.0</td>
<td>4.9</td>
<td>5.0</td>
<td>0.3</td>
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<td>Provide Meals on Time</td>
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<td>5.0</td>
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<td>5.0</td>
<td>1.0</td>
<td>4.9</td>
<td>5.0</td>
<td>0.3</td>
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<td>Employee in Uniform and Personal Hygiene</td>
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<td>3.9</td>
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<td>4.1</td>
<td>4.0</td>
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<td>Appropriate Cooking Methods Used</td>
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</table>

Mean score is calculated by:
- Summing the score for each “measure point” from every patient (e.g., 200 patients; total points = 980 if 180 ranked the quality of the meal as satisfactory or a “5” and 20 patients ranked the quality of the meal as a “4”)
- Dividing the summed score by the number of patients who responded (e.g., 980/200 = 4.9)
- Repeat for each day, summing the daily score over 28-31 days (depending on the month)
- Dividing the total summed score by the number of days
- The resultant scores by month are shown in Table 1 for the Patient Satisfaction with the Meal Service.
<table>
<thead>
<tr>
<th>Measure Points</th>
<th>JAN</th>
<th>FEB</th>
<th>MAR</th>
<th>APR</th>
<th>MAY</th>
<th>JUN</th>
<th>JUL</th>
<th>AUG</th>
<th>SEP</th>
<th>OCT</th>
<th>NOV</th>
<th>DEC</th>
<th>Range</th>
<th>Mean</th>
<th>Median</th>
<th>SD</th>
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</thead>
<tbody>
<tr>
<td>The quality of food raw materials</td>
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<td>4.0</td>
<td>4.0</td>
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<td>4.5</td>
<td>4.5</td>
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<td>4.0</td>
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<td>2.0</td>
<td>2.0</td>
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<td>1.0</td>
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<td>Completion of academic degrees and certification of health</td>
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<tr>
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<td>Complete appliance and equipment</td>
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<tr>
<td>Safety equipment and do maintenance</td>
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<td>4.1</td>
<td>3.9</td>
<td>4.1</td>
<td>3.9</td>
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<td>0.3</td>
<td>4.0</td>
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</tr>
<tr>
<td>Compliance with clean equipment, floors and organize food stores</td>
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<td>3.9</td>
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