PATIENT SATISFACTION WITH FOOD AND BEVERAGE SERVICES IN HOSPITAL SETTING: A STUDY

Dissertation Submitted to

The IIHMR University, Jaipur

for the partial fulfilment for the award of the degree of

Master of Business Administration (MBA)

In

Hospital and Health Management

by

Ms. Aliya Afreen Sharfuddin

Under the Supervision and Guidance of

Dr. Nutan. P Jain

2023

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DECLARATION BY STUDENT

I hereby declare that this dissertation titled “Patient Satisfaction with Food & Beverage Services in Hospital Setting: A Study” is the bonafide record of my original research work. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.

(Signature)

Name of Student

Date

KIMS HOSPITALS™

Dt: 26-05-2023

TO WHOM SO EVER IT MAY CONCERN

This is to certify that **Ms. Aliya Afreen Sharfuddin, ID No: 90402942** has undergone the **Internship** in the department of **Corporate Projects** at **Krishna Institute of Medical Sciences** from **27-02-2023** to **26-05-2023.** During the course of her work, found to be good.

We wish her all the best for her future endeavors.

KIMS is 750 bedded, Multi-Specialty hospital. This is accredited with NABH, NABL & ISO 9001:2015 certified.

For Krishna Institute of Medical Sciences Ltd.

KRISHNA INSTITUTE OF MEDICAL SCIENCES LTD. Secunderabad

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CERTIFICATE

This is to certify that Aliya Afreen Sharfuddin in partial fulfilment of the requirements for the award of the degree of MBA (Hospital and Health Management) from the IIHMR University, Jaipur has successfully completed her/his internship at KIMS Hospital, Secunderabad during February 27- May 26, 2023.

Place: Preceptor/ Head of the organization

Date: Name of the organization

CERTIFICATE

This is to certify that dissertation titled “Patient Satisfaction with Food & Beverage Services at a Hospital Setting: A Study” is a record of the research work undertaken by Aliya Afreen Sharfuddin in partial fulfilment of the requirements for the award of the degree of MBA (Hospital and Health Management from the IIHMR University, Jaipur under my guidance and supervision and her approach to the research study has been sincere, scientific, and analytical.

Faculty Guide	School Dean
IIHMR University, Jaipur	IIHMR University, Jaipur
Date	Date

Abstract

Title: Patient Satisfaction with Food and Beverage Services in Hospital Setting: A Study

Author: Aliya Afreen Sharfuddin

Advisor: Dr. Nutan P. Jain

Keywords: Patient Satisfaction, Catering, Food and Beverages, Food wastage, Turnaround time.

Introduction: In-patients at hospitals receive food and beverage services, which enhance their satisfaction with the overall services. Patients demand prompt and effective care, and they may become impatient if there are any delays or lengthy waits. The turnaround time for services has a significant impact on the calibre of food and beverage services.

Objectives: The objectives included: to study the process flow of food & beverage service; to study the service turnaround time of food and beverages in the hospital; and to study patient satisfaction with food and beverages services.

Methodology: The study was conducted at one of the hospitals in South India during February-May 2023. The methods included process mapping, food wastage, observation of time taken in serving the food and beverages. One hundred in-patients were administered self-administered questionnaire for studying their satisfaction with F&B services.

Results: About 77% patients reported that the food was delivered which was a major indicator for their satisfaction, but hygiene remained a major concern. Nearly 74 kilograms rice was wasted in the period of 60 days.

Conclusion - The study revealed that food delivery TAT in the hospital was satisfactory. There were areas for improvement, such as variety in food options, delivery timing and consideration of dietary requirements. There are also issues of food wastage in the hospital, particularly with white rice.

Acknowledgment

I would like to express my profound gratitude to Dr. Renuka, my supervisor, for her advice and assistance during the study process. The research questions, methods, and analysis plan were significantly shaped by their experience, insights, and criticism.

I would also like to express my gratitude to my mentors, Mr. Prabhuniteja and Dr. Ayushi Devi, at KIMS Hospital, who helped with data gathering and analysis and offered suggestions. Their contributions helped to guarantee the validity and dependability of the research's conclusions.

I want to sincerely thank my academic mentor, Dr. Nutan. P Jain for their consistent support and direction during this research effort. Their exceptional knowledge and experience were crucial in determining the focus and approach of this investigation. This study would not have been possible without her assistance. I appreciate her taking the time, having the knowledge, and helping me with this study project.

I would also like to thank Dr. Mahender Kumar Sir and Dr. P.R Sodani Sir for their constant support and guidance throughout my MBA journey. They have been patient, understanding, and supportive during every stage of my research adventure, and I am grateful for all of that.

Finally, I want to thank my family sincerely for their consistent support and inspiration during the study process. My ability to stay inspired and concentrated was greatly aided by their love, tolerance, and understanding.

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Abbreviations

FC – Financial Counsellor

F&B – Food and Beverage

GM – General Manager

IP – In Patient

KIMS – Krishna Institute of Medical Sciences

OP – Outpatient

TAT – Turn Around Time

CHAPTER 1

Introduction

Food and beverage services are extremely important to patients' overall pleasure and experience at a hospital. A satisfying encounter might enhance patients' wellbeing and hasten their overall recovery. However, many patients and medical professionals have expressed concern about the calibre of the food and beverage services offered in hospitals. Taste, variety, accessibility, and service turnaround time (TAT) are some of the variables that might affect how satisfied patients are with food and beverage services. Although TAT is significant in the delivery of healthcare services, little is known about how it affects patient satisfaction with food and beverage services in a hospital setting. Therefore, to raise the standard of these services and improve the patient experience in hospitals, a thorough investigation into the connection between TAT and patient satisfaction with food and beverage services is required.

Objectives of the Study

This study aims at improving quality of services food & beverage services at KIMS.

- To study the process flow of food & beverage service in KIMS hospital.
- To study the service TAT (turnaround time) of food and beverages services (turnaround time) in the hospital
- To study patient satisfaction with food and beverages services
- To suggest ways to overcome the problems faced by the food & beverage department, if any.

CHAPTER - 2

Review of literature

To understand the current state of the subject, a literature review was conducted using Google Scholar and PubMed. A thorough analysis of the existing literature is necessary to comprehend how service TAT and patient satisfaction are related.

The goal of this review is to compile the information learned over the previous five years about the effect of service TAT on patients' satisfaction with food and drink in hospitals.

Author	Title	Objective	Methodology	Results
N. Junior Sundresh, A.Bhuvaneshwari, R.Rajendran (2016)	Patient Satisfaction on Hospital Catering and Dietary Management in A Specialty Hospital	To investigate the link between dietary service and client satisfaction as well as the one between catering service and client satisfaction.	1.This descriptive study was carried out in a hospital with specialised care. 2.The data from the patients were gathered using a specially created questionnaire. 3.The study comprised hospital patients who had been admitted.	61% of customers said they were generally satisfied, while 57% of customers said they were ambivalent about the catering service..
Nur Farhana Aminuddin, Reena Kumari Vijayakumaran, Shariza Abdul Razak (2018)	Patient Satisfaction With Hospital Foodservice and its Impact on Plate Waste in Public Hospitals in East Malaysia	The current study assessed the association between patient satisfaction and plate waste by comparing patient satisfaction in hospital settings with other variables.	A questionnaire with three sections was given to patients at various hospitals:,	1. Survey findings showed that 53.3%, 29.3%, 14.1%, 2.7%, and 0.5% of respondents gave the hospital's foodservice respective ratings of alright, good, poor, very good, and very poor. 2. 11% of patients consumed the entirety of their food, with an average of 35% of plates being wasted across all hospitals.
Suruthika.T, Dr. V. Uma (2022)	A Study on Analysis of Patient Food Delivery in	1.To research the hospital's process for delivering food to patients.	The patient food delivery was analysed using a straightforward percentage analysis	1.Typical duration: 20 to 30 minutes. 43 minutes on average for solid food, 28 minutes for liquid

	a Multispecialty Hospital, Coimbatore	2.To determine whether the proper food is supplied to every patient at the appropriate time. 3.To suggest ways to enhance hospital food delivery (the right food, at the right time for patients).	and average approach. The daily flow in the dietary department is taken into account and examined. A checklist has been created with this objective in mind.	meals. Food in a package: 42 minutes 2. There have been a total of 126 cases of package food mismatch, 63 cases of food mismatch, 60 cases of label missing, 77 cases of food mistake, 66 cases of patient ward/room changes, 64 cases of patient labour room changes, 79 cases of patients moved for other processes, and 6 cases of normal diet changes to tube feeding.
Vanessa A. Theurer (2010)	Improving patient satisfaction in hospital food service system using low cost interventions: Determining the whether a room service system is the next step.	1) Use a validated patient survey to identify the food, service, and customer factors that affect food service dissatisfaction.2) Based on the results of the survey, plan and put into practise cost-effective modifications to the food service.	The Acute Care Hospital Foodservice Patient Satisfaction Questionnaire (ACHFPSQ) (Capra, Wright, & Sardie, 2005) was utilised in this study as a validated survey.	The purpose of this study is to evaluate current foodservice satisfaction and pinpoint the areas of foodservice that require improvement using a validated, extensive inpatient survey. The effectiveness of these interventions will be tracked by re-issuing surveys after the selection and implementation of cost-effective, customer-focused treatments. The results of the survey will be used to decide whether any more adjustments are required for STMH foodservice to increase customer satisfaction.
Alyssa Moran, MPH, RD; Erica M.	An Intervention to Increase Availability of	To increase the nutritional value of hospital food	ospitals were chosen, and staff from the health department assisted them technically. On-site	The HHFI now includes 24 private hospitals and 16 public institutions.

Krepp, MS, CHES; Christine Johnson Curtis, MBA; Ashley Lederer, MS, RD (2016)	Healthy Foods and Beverages in New York City Hospitals: The Healthy Hospital Food Initiative, 2010–2014		evaluations were used to keep an eye on implementation in each of the four categories and a menu analysis. At baseline and at the end of the HHFI, 28 hospital cafeterias and cafés were analysed to determine changes.	The majority of private hospitals (n = 18) adopted criteria in at least two areas. Most hospitals implemented a healthy value lunch in their cafeterias. (n = 19), eliminated harmful items from the entry and check-out (n = 18), improved the proportion of whole grains provided to at least 50% (n = 17), and decreased the number of calories in pastries and sweets (n = 15).
Heather J. Hartwell Ph.D., John S.A. Edwards Ph.D., John Beavis Ph.D. (2006)	Plate versus bulk trolley food service in a hospital: comparison of patients' satisfaction	This study compared the patient satisfaction levels of hospital plate and bulk trolley meal services. The main characteristics that set each system's satisfaction apart would also be determined.	Patient satisfaction was measured using a consumer opinion card (n = 180), which focused on the quality indicators of core items and compared the two delivery methods of plate and trolley. Based on the food qualities that were measured, a model was created using binary logistic regression analysis to forecast the food service style. Multinomial logistic regression was utilised in further research to predict opinion for the evaluation of each food feature within food service style.	In comparison to the plate system of delivery, where flavour is linked to bad opinions or dissatisfaction, the results showed that the bulk trolley method of food distribution allows all foods to have a more acceptable texture, temperature, and for some foods (potato, P = 0.007; poached fish, P = 0.001; and minced beef, P 0.0005), flavour. A model was created to predict how satisfied patients were with the two service systems.

CHAPTER - 3

Methodology

❖ Research Questions

- What is the current service TAT of food and beverages in the hospital?
- What is the process flow of food and beverages services?
- Whether the patients are satisfied with the food and beverages related services and time taken or not?

❖ Study Area/Population

The specific department chosen for investigation was the Food and Beverage (F&B) department at Krishna Institute of Medical Science (KIMS), Secunderabad.

The study population also includes -

All patients who got food and beverage services while they were hospitalised were included in the study population.

The staff of the F&B unit along with the doctor who advised the diet.

- Dietician,
- Cooking team,
- Head / Manager of the Cooking team,
- Doctors who advice for the diet.

❖ Sampling frame

The purposive sampling technique was to determine patient satisfaction with the hospital's food and beverage services and to investigate the connection between service TAT and patient satisfaction. Those patients were addressed who got food and beverage services throughout their hospital stay and offered them to take part in the study. Their participation was completely voluntary and anonymous.

❖ Sample Size

The sample size of the patients prescribed and received food and beverages was 100.

This was calculated keeping in view: An average of two observations of lunch provided in different two wards were done in a day.

❖ Data Collection procedures

A self-administered questionnaire was used to gather the data, and the patients were interviewed before being let go from the hospital, they were required to complete the questionnaire.

A spreadsheet was used to enter the data, and to analyse it. Patient satisfaction ratings and service TAT ratings were compiled using descriptive statistics.

❖ Study Tools

The study involved observing the timings of trolleys that delivered meals to patients in two wards per trolley (only in lunch timings due to time restrictions). The departure time of the trolley from the F&B department, the time it reached the respective floor, as well as the start and end times of the meal service were recorded. Additionally, feedback on the F&B service was collected from the patients themselves.

A self-administered questionnaire was administered with IPD patients to get information on their satisfaction with food and beverage services. A checklist of observations for recording service TAT & food wastage.

❖ Duration of study

The study was conducted over a period of 3 months starting from February 2023.

❖ Data Analysis

Descriptive statistics was used to summarize the service TAT of food and beverages, and patient satisfaction.

Process map was drawn starting to the end of the service.

❖ Operational Definitions

- Service TAT: the period needed to finish a service from the time a request is made until the patient receives the service.
- Patient satisfaction measures how content people are with the level of medical treatment and services they receive.
- The supply of meals, snacks, and beverages to patients in a hospital setting is known as food and beverage services.

❖ Ethical Considerations

The ethics described above guided how the study was carried out. All study participants were provided informed permission, and patient confidentiality was upheld throughout.

CHAPTER - 4

Results

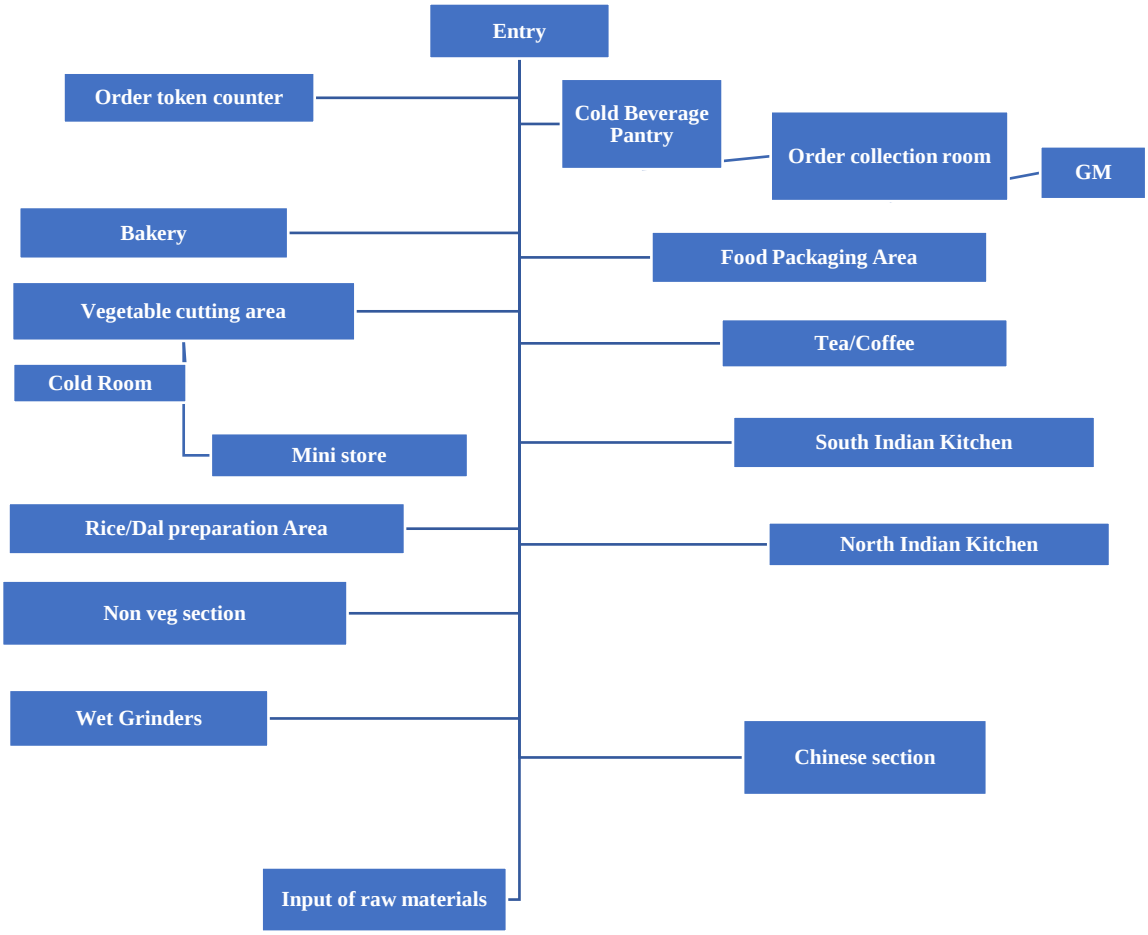
The results are presented explaining about the Food & Beverages (F&B) Department at Krishna Institute of Medical Sciences (KIMS), and followed by the patient's satisfaction, etc.

A hospital's food and beverage division are essential to guaranteeing the wellbeing and fulfilment of patients, guests, and employees. The management and provision of top-notch food and beverage services on hospital property are within the responsibility of this department. It emphasises accommodating a variety of nutritional needs, including special diets for patients with certain medical conditions. Dieticians and nutritionists work together with the department to develop nourishing meal programmes that support general health and encourage healing. Additionally, it makes certain that all safety and hygiene regulations are strictly followed when obtaining, preparing, and serving food. The Food & Beverage department works to provide a pleasant dining experience, taking into account each person's comfort and preferences, while upholding a warm and friendly ambiance within the hospital setting.

Table 4.1- Service timings of F&B Services to the Patients

Timing	Meal
6:30 - 7:30	Tea/ Coffee
7:30 - 8:30	Breakfast
8:30 - 9:30	Tea/ Coffee
10:30 - 11:00	Soup
12:30 - 13:30	Lunch
15:00 - 16:00	Tea/ Coffee
19:30 - 20:30	Dinner

Fig 4.1 Layout of F&B at name of the hospital:



❖ Human Resource

- Total staff in the F&B department = 160 approximately
- Delivery of the meals to wards = 1 staff servers 2 wards (Example – 9A & 9B)
- Each ward contains = approximately 22 to 29 patients (depending on the ward)
- 1 F&B staff servers' food to = 44 patients

❖ DietKare application:

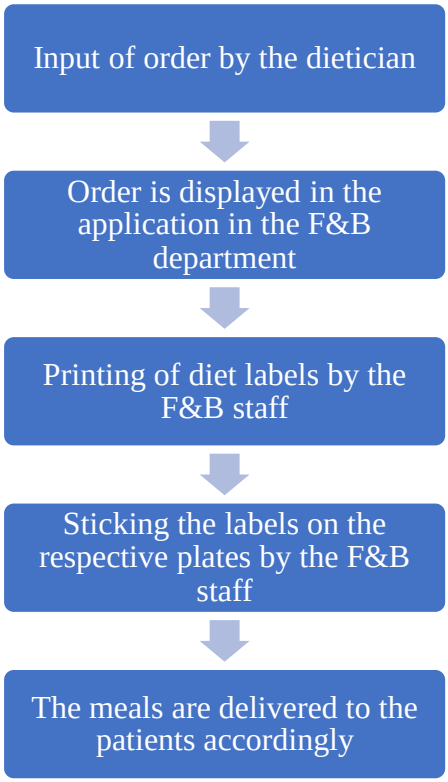
An application called DietKare attempts to support users in maintaining a balanced and healthy diet. It is used by the dieticians and the F&B staff. The app offers individualised meal plans based on each user's particular needs and goals. A patient's basic details, such

as mealtime, dietary choices and restrictions, such as vegetarianism or gluten intolerance, etc are requested.

The dietician puts the patient diet on the DietKare app which is then reflected in the F&B department and the meals are prepared according to it.

DietKare's user-friendly layout, which is easy to navigate, is one of its most notable characteristics. The software is helpful to measure their food intake and track their progress.

Figure 4.2 – Process flow of DietKare application



❖ **Kitchen**

The hospital kitchen is thoughtfully planned. A receiving area, suitable storage, a pre-preparation room, a preparation area, or the main/hot kitchen are all included in the kitchen. There might be a chilly kitchen in the hospital kitchen.

Additionally, the kitchen can be separated into several areas, such as the pre-preparation area, preparation area, grain cleaning area, tea and coffee section, roti preparation area, service and trolley loading area, washing area and stores. To avoid food material contamination and to deter theft, the storeroom's placement in proximity to the kitchen is crucial. It would be ideal to have separate storage spaces for perishable and non-

perishable goods. When designing the kitchen, the workflow, the amount of space needed between workstations and platforms, and the presence of different equipment must all be considered.

Common hospital and kitchen equipment -

- Gas stoves
- Steamer
- Refrigerators
- Puffer with chapatti tava
- The deep freezer
- a deep fryer
- Walk-in cooler
- Ovens
- balance scale
- bread mixer
- Toaster
- processing food

❖ Types of diet :

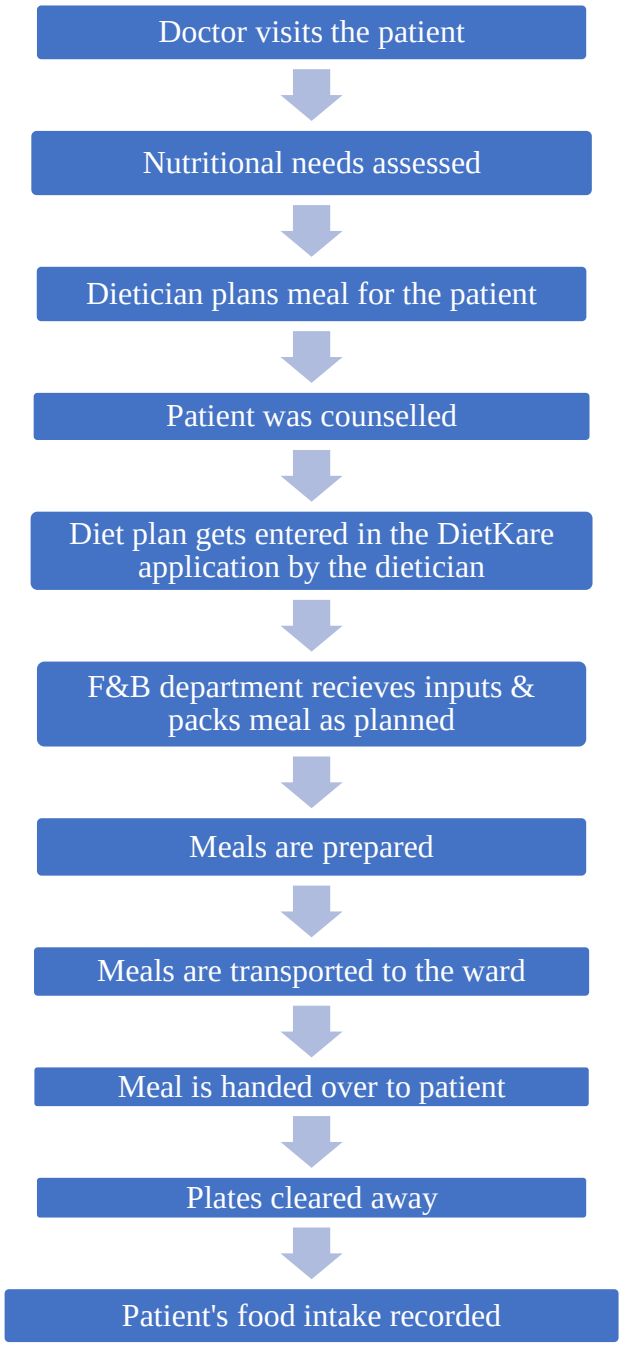
Regular/Normal diets include bland and soft ones as well as those with high or low protein, high or low fat, and sodium-restricted sodium intake. Diet lists are typically created after menus have been prepared. All the medical workers who are present has access to these.

The items to be supplied in an appropriate form are specified in the dietitian's menu plans for each individual meal. The nursing directors will inform the dietary division of how many patients are on each type of diet. For those who are not medically able or permitted to eat specific food items that are typically utilised in the preparation of the menu, special diets are created. The nutritionist or the food service manager oversees the preparation of these diets.

Table 4.2 -Menu by days

Days	Menu
Monday	Sambar, Carrot beans fry, Lobia curry, Mint Rasam, Turai Chutney
Tuesday	Palak Daal, Chow-Chow fry, Channa Curry, Pepper rasam, Dosakaya
Wednesday	Sambar, Truai fry, Paneer curry, Rasam, Tindly Chutney
Thursday	Dosakaya daal, Bhindi fry, Soya beans curry, Rasam, Louki Chutney
Friday	Palak Daal, Carrot beans fry, Green peas curry, Rasam, Cabbage
Saturday	Sambar, Louki fry, Rajma curry, Rasam, Beetroot chutney
Sunday	Sambar, Tindly Fry, Chiw-Chow curry, Rasam, Beetroot chutney

Figure 4.3 - Process flow of service:



In this healthcare process, the doctor first visits the patient to assess their condition. Then, the patient's nutritional needs are evaluated by a dietician. Based on these needs, the dietician plans a personalized meal for the patient and provides counselling regarding their dietary plan. The diet plan is then entered into the DietKare application. The Food and Beverage department receives the information from the application and prepares the meals accordingly. The meals are transported to the patient's ward and handed over to them. After the meal, the plates are cleared, and the patient's food intake is recorded for monitoring purposes. This flowchart demonstrates a systematic approach to ensuring that patients receive appropriate dietary care and their nutritional needs are met in a healthcare setting.

Demographic profile of patients:

Table 4.3 – Demographic details of the patients

Category	Percentage
Gender	
Male	53
Female	47
Age	
<18 years	2
18 - 25 years	11
26 - 35 years	15
36 - 45 years	36
> 45 years	36
Type of Ward	
Twin sharing	55
Single	45
Duration of stay	
Day Care	3
1-2 days	16
2-3 days	81

The respondents consisted of both women (47%) and men (53%). All the patients were adults except two only. About 72 per cent patients were of 35 plus years of age. According to the data, 55 respondents chose twin-sharing rooms, while the remaining respondents selected single rooms. Most of the patients (81%) have stayed for 2-3 days. Nearly 55 per cent patients stayed in twin sharing.

Patients Feedback

- Quality of the food (Timeliness of food & beverage service to patients).

According to the results, 54% of the respondents were happy that the food was delivered to them on time always. 37% of respondents said that they were sometimes being provided the food on time, and rest of the respondents said that they rarely got their food on time during their stay at the hospital.

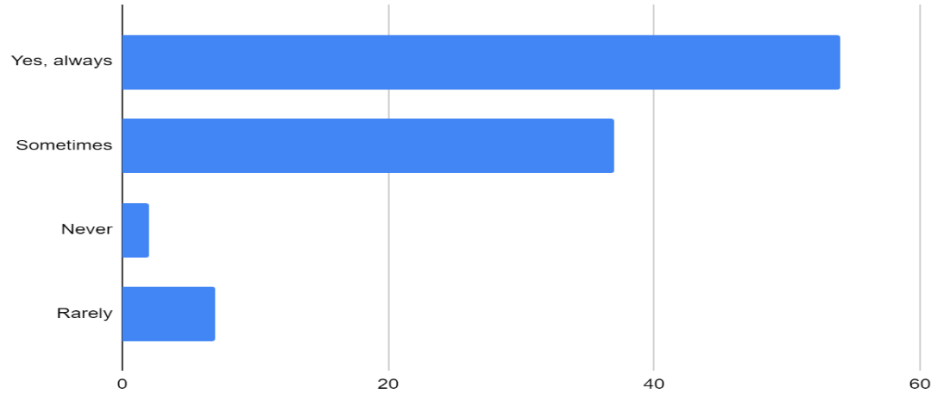


Figure 4.4 – Percentage distribution of patients satisfied with timeliness of food & beverage service in the hospital.

- Temperature of food & beverage are well maintained.

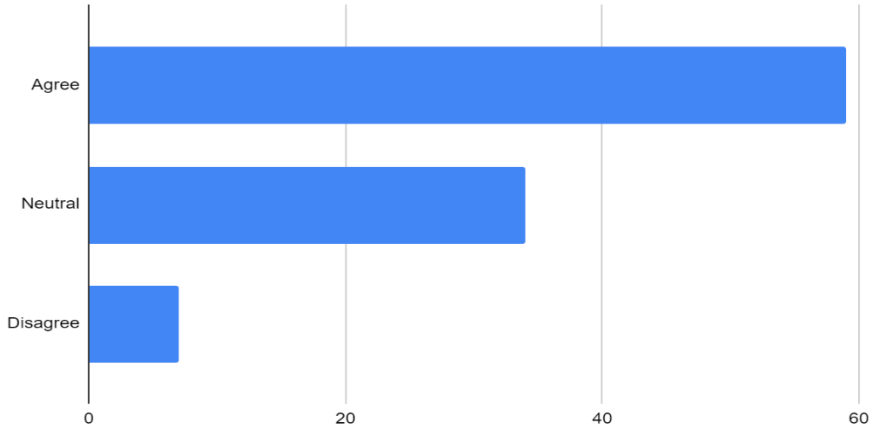


Figure 4.5– Percentage distribution of patients satisfied with the temperature of food & beverages being served to them.

The survey says that 59% of the patients are happy with the temperature of the food & beverage at the time of serving. 34% of them said they do not have any issues with the same and 7% are not satisfied with it.

- Quality of food served in the hospital.

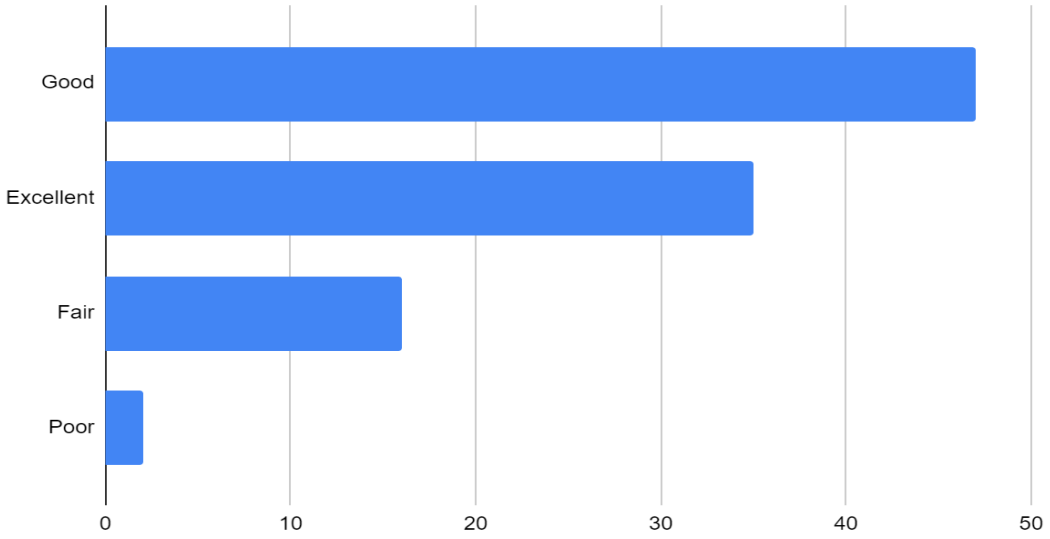


Figure 4.6 –_Percentage distribution of patients satisfied with the quality of food & beverage serviced in the hospital.

It was observed that the quality of food & beverage that was served to the IP patients was liked by most patients (47% said good and 35% said excellent). Rest of the patients were not satisfied with the quality of food served to them.

- Cleanliness and hygiene of the food and beverage in the hospital.

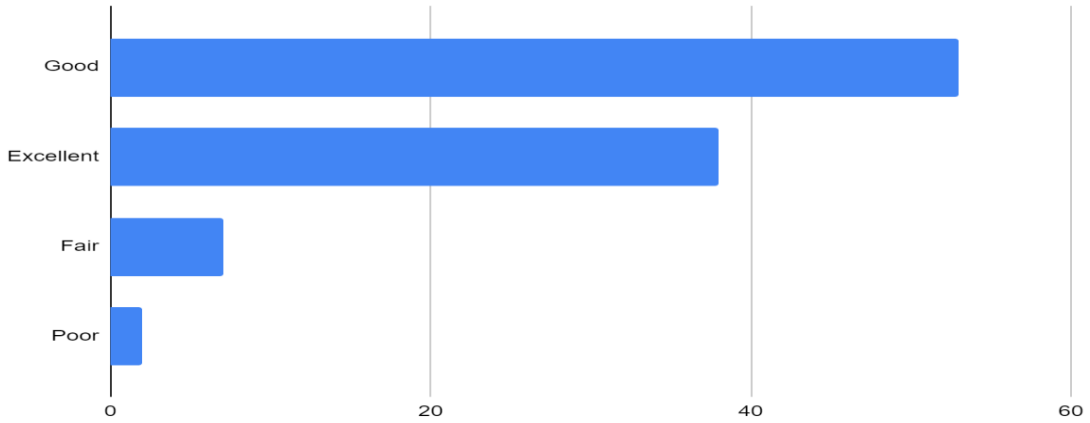


Figure 4.7 - Percentage distribution of patients satisfied with the cleanliness & hygiene of food & beverage serviced in the hospital.

It was observed that the cleanliness & hygiene of food & beverage was liked by most patients (53% said good and 38% said excellent). Rest of the patients were not satisfied with the cleanliness & hygiene of the food that was served to them.

- Variety of food options available in the hospital.

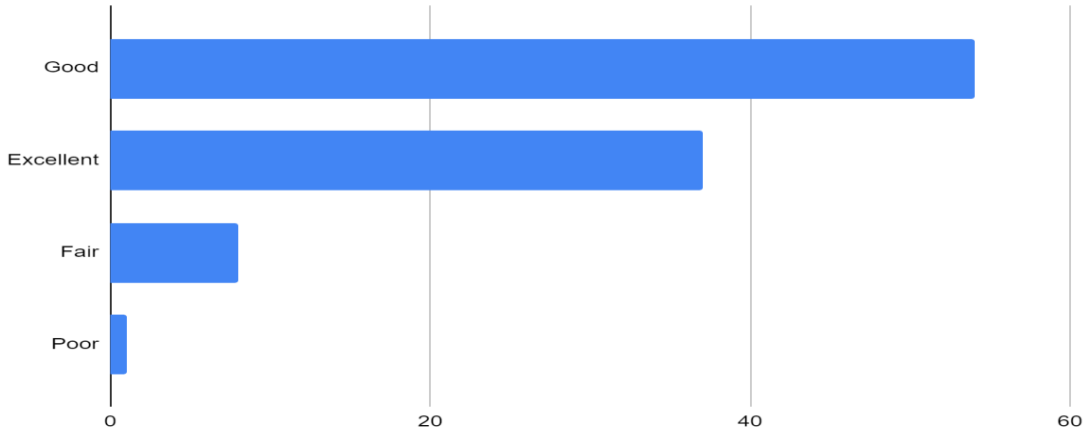


Figure 4.8 - A clustered bar graph depicting the no. of patients satisfied with the variety of food & beverage options in the hospital.

54% of the patients have rated the variety of food options as good, 37% of them have rated it as excellent and rest of them did not like the food options available to them.

- Consideration of dietary requirements while serving meals.

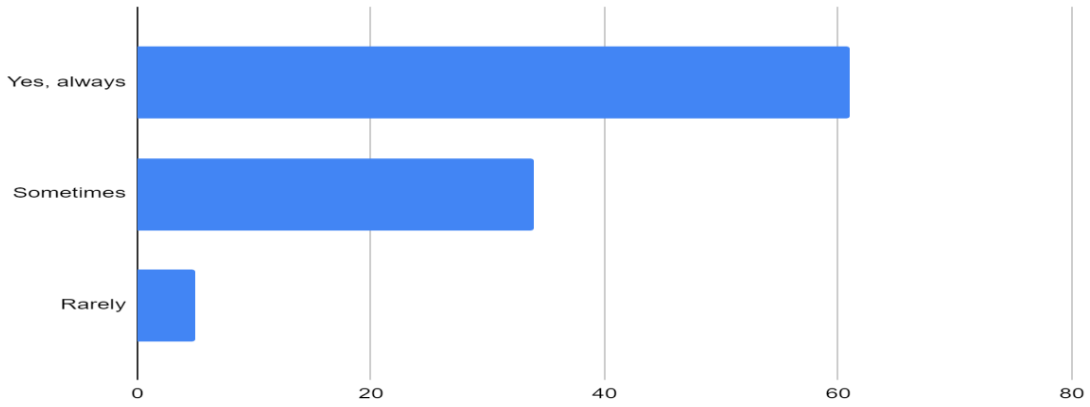


Figure 4.9 - Percentage distribution of patients satisfied with the consideration of dietary requirements of food & beverage in the hospital.

According to the data, 61% of the people reported that their dietary requirements were taken into consideration when placing their order. Additionally, 34% stated that it was taken into consideration sometimes, while the remaining respondents stated that their dietary requirements were never taken into consideration.

- Meals that are being served are fresh.

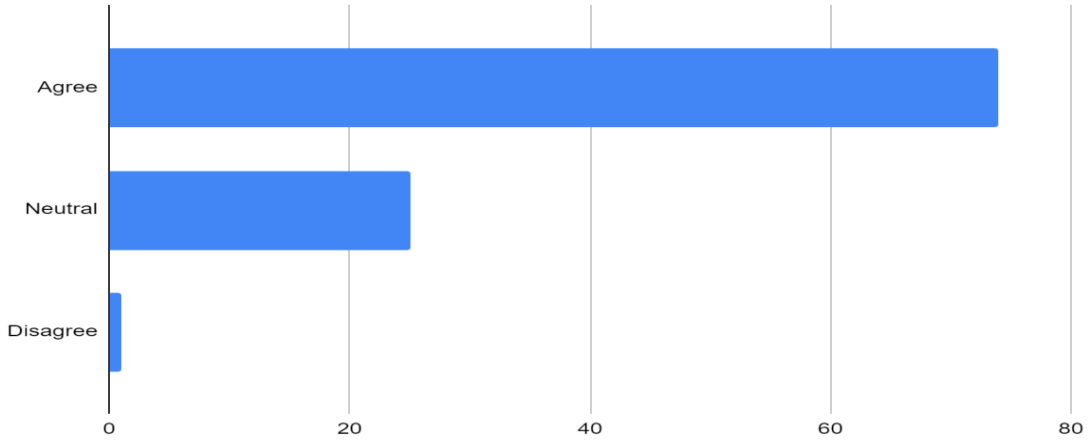


Figure 4.10 - Percentage distribution of patients satisfied with the freshness of food & beverages in the hospital.

Here we can see 74% of the patients agree that the food being served is fresh 25% are neutral to this and there is a very low percentage of people who disagree.

- Taste, smell & appearance of food is good.

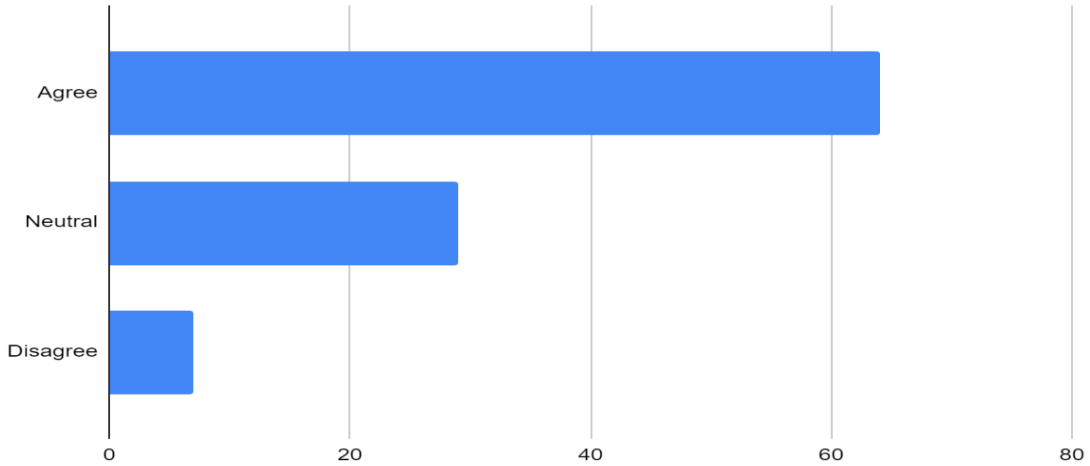


Figure 4.11 - Percentage distribution of patients satisfied with the taste & smell of food & beverages in the hospital.

Here we can see that 64% of the people agree that the taste, smell and also appearance of food is good 29% are neutral to this and 7% disagree.

- The plates on which meals are being served is chipped and stained.

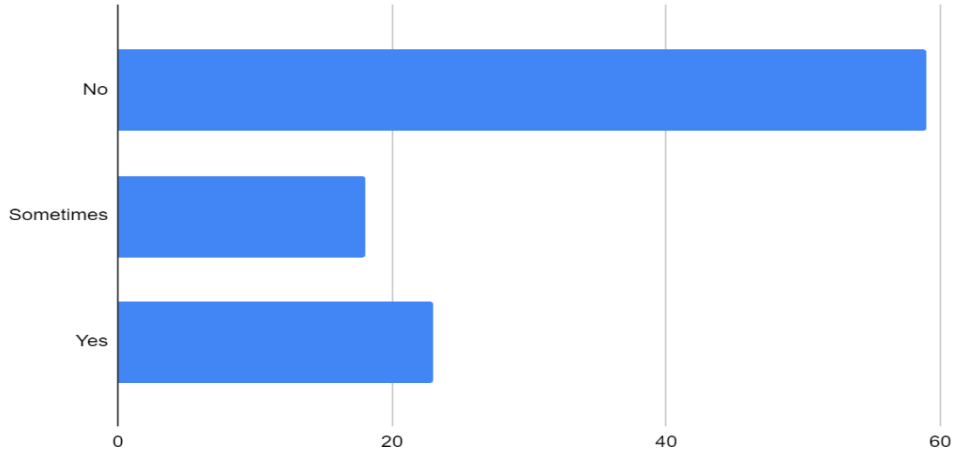


Figure 4.12 - Percentage distribution of patients complained about the plates being chipped & stained.

24% of the respondents feel that the quality of the plates are not good and it's chipped and stained 58% disagreed to this and 18% said that it was sometimes.

❖ Service Feedback:

- Counselling of patients by the dietician regarding their diet.

The data says that a good percentage of people, that is 83%, says that the dietician did counsel them regarding their diet schedule while rest of the patients disagreed to it.

- Response from F&B staff when patients call to order food.

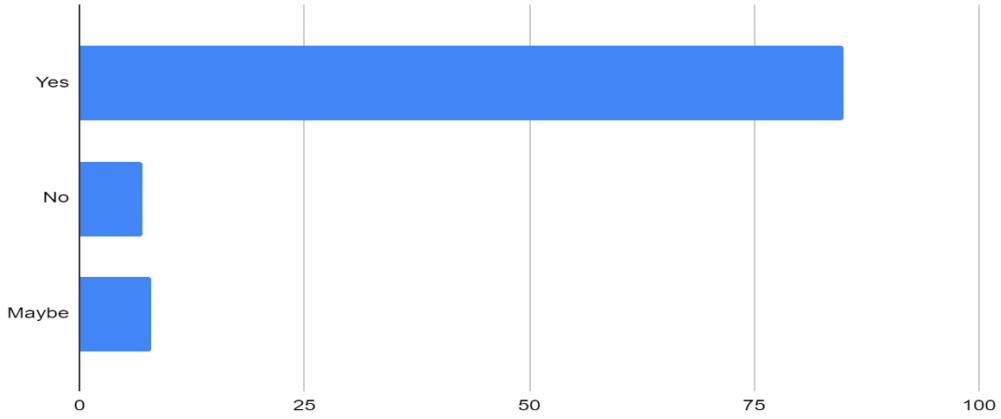


Figure 4.13 - Percentage distribution of patients satisfied with the response from F&B staff when they call to order food.

Here the numbers are pretty good where 85% of the people believe that the food and beverages staff respond to their calls when ordering something while there are 7% and 8% of people who said no and maybe.

- Delivery time of food & beverages to patients after ordering it.

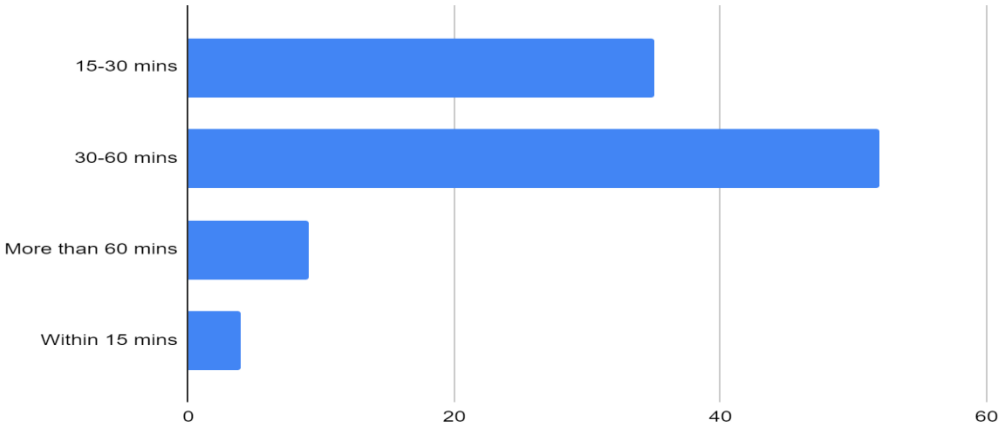


Figure 4.14 – Timing of food & beverage received to the patients after they order it.

Here we can see varying numbers where 52% of the people reported that it takes about 30 or 60 minutes 35% of them said that it was delivered within 15 to 30 minutes there are 9% who said it it takes more than 60 minutes of time while there is a small percentage of people who said it arrived within 15 minutes

- Helping nature of F&B staff.

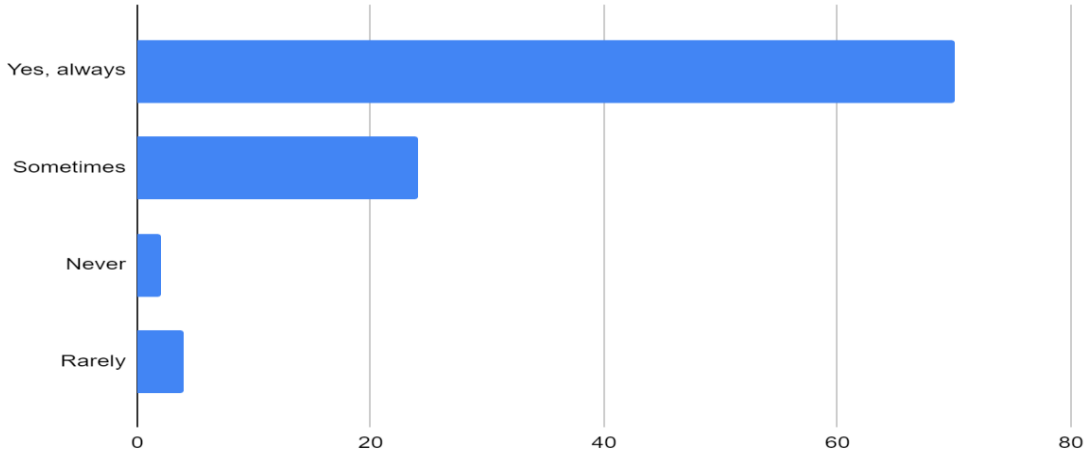


Figure 4.15 - Percentage distribution of patients satisfied with the helping nature of F&B staff in the hospital.

The numbers look promising here where 70% of the people said that yes always the staff members of the food and beverage department were helpful 24% of them said it was sometimes well there is a very small percentage of people who felt it was either rare or never.

- Staff who delivers the meals are neat and clean.

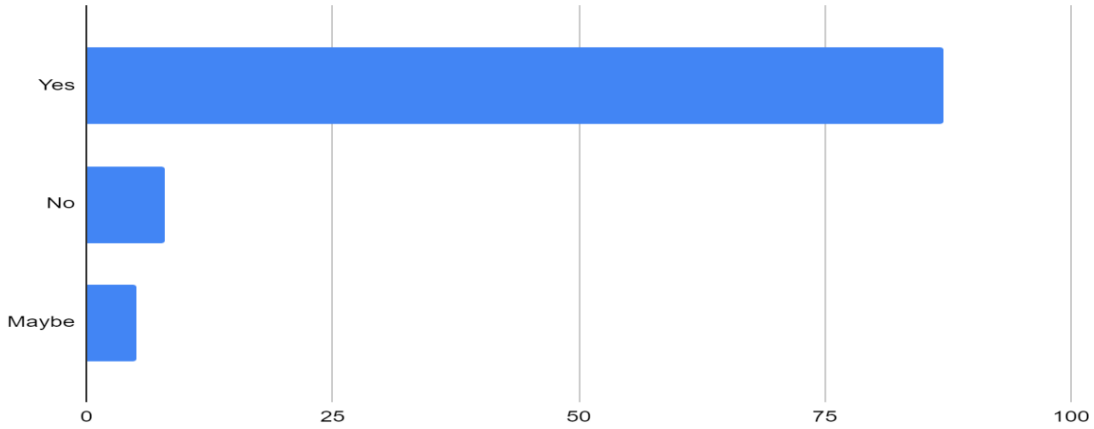


Figure 4.16 - Percentage distribution of patients satisfied with neatness & cleanliness of F&B staff in the hospital.

Here again the numbers look very good where 87% of the respondents said that the staff who delivers the meal are neat and clean 8% of them felt that they were not and there is a small percentage of respondents who do not have an opinion on this.

- The Food & Beverage staff communicates in a polite manner.

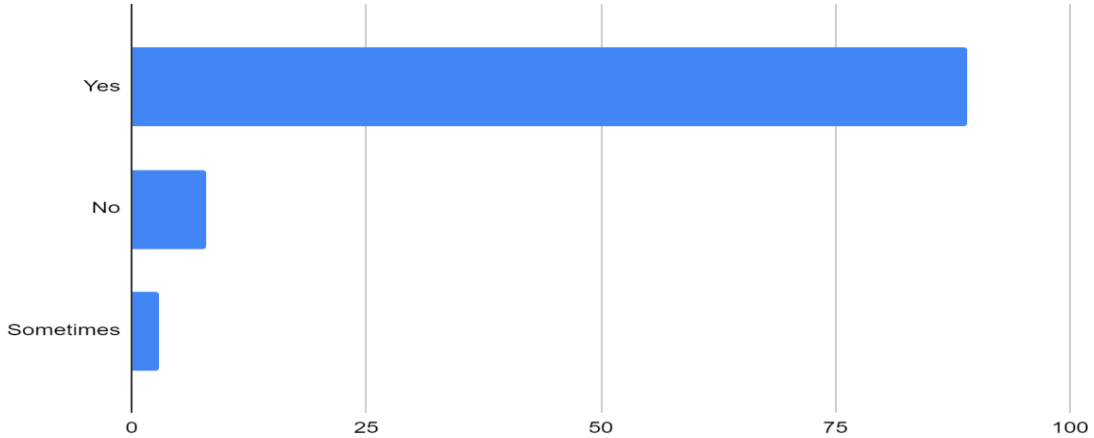


Figure 4.17 - Percentage distribution of patients satisfied with the politeness of F&B staff in the hospital.

89% of the people here strongly believe that yes the food and beverages staff communicate in a polite manner and 8% of them feel that they don't and there is a small percentage of people who said that it was sometimes that they were not polite.

- Suggestions for improving the food and beverage department services in the hospital.

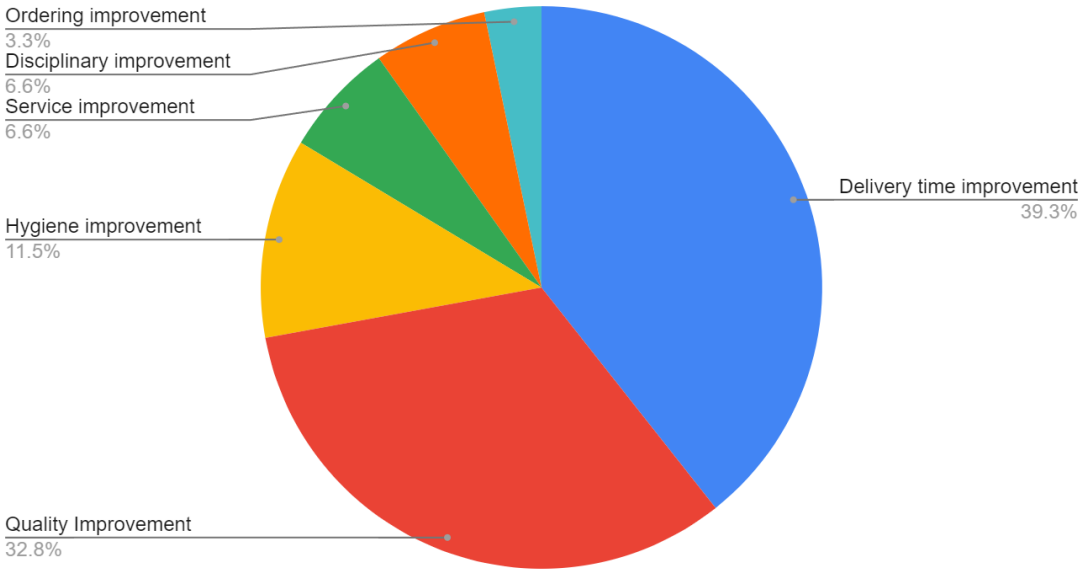


Figure 4.18 - Percentage distribution of patients suggesting the areas of improvement in F&B department.

Here we can see varying numbers where 39.3% of people said that the delivery time can be improved 32.8% of the respondents feel that the quality can be improved and as we can see 11.5% of them feel that hygiene can be improved while there is a small percentage of people who said that ordering discipline and service can be made better.

Food Service TAT

Food delivery TAT in a hospital refers to the amount of time needed to receive, process, prepare, and deliver the patient's meal order to the ward, room, or designated dining area. Food delivery as it directly affects the promptness and effectiveness of meal delivery. TAT is a crucial component of patient experience and satisfaction. A shorter TAT is preferred since it makes sure that patients get their meals on time, enabling them to meet their nutritional requirements, follow dietary restrictions, and generally contribute to their wellbeing while they are in the hospital.

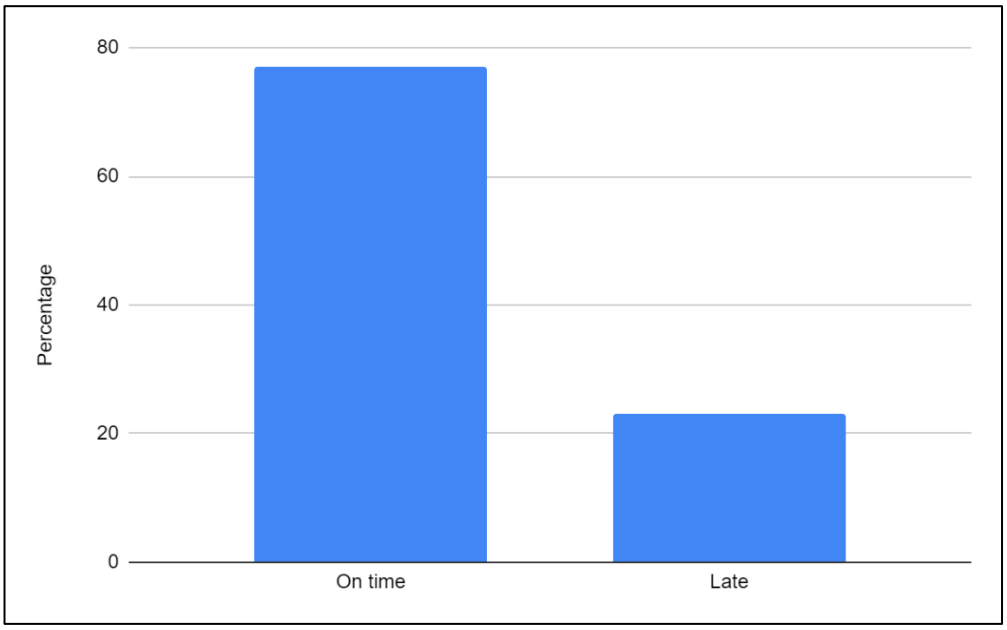


Figure 4.19 – No. of time the meals were delivered on prescribed time and late to the patients.

According to the data collected (n = 100), 77% of the time the food was delivered on prescribed time and 23% of the time it was delivered late which affected the patient satisfaction.

- ❖ TAT Calculation:

To evaluate the duration of each lunch session, the subsequent formula is employed:

TAT = End Time - Start Time

Here, the Start Time denotes the initiation of the lunch session, while the End Time signifies the conclusion of the session.

For instance,

- Start Time: 12:40
- End Time: 13:10

To calculate the TAT:

TAT = 13:10 - 12:40 = 0:30 (30 minutes)

This formula is employed for each day to ascertain the duration of each lunch session.

Average TAT = 0.025 minutes

Food Wastage

Hospital food waste is a serious issue that needs to be addressed right away. Despite being an important organization that places a high priority on patient care and wellbeing, hospitals frequently struggle to effectively manage their food resources. This wastage is caused by several things, including poor meal planning, overproduction, inadequate storage, and patient dietary restrictions. The high patient turnover rate and erratic feeding requirements further make things more difficult. To address this issue, better inventory management systems must be put in place, portion sizes must be optimized, training must be promoted, and surplus food must be shared with nearby food banks or organizations. Hospitals can actively battle food waste to lessen their environmental impact and increase the sustainability of healthcare in general.

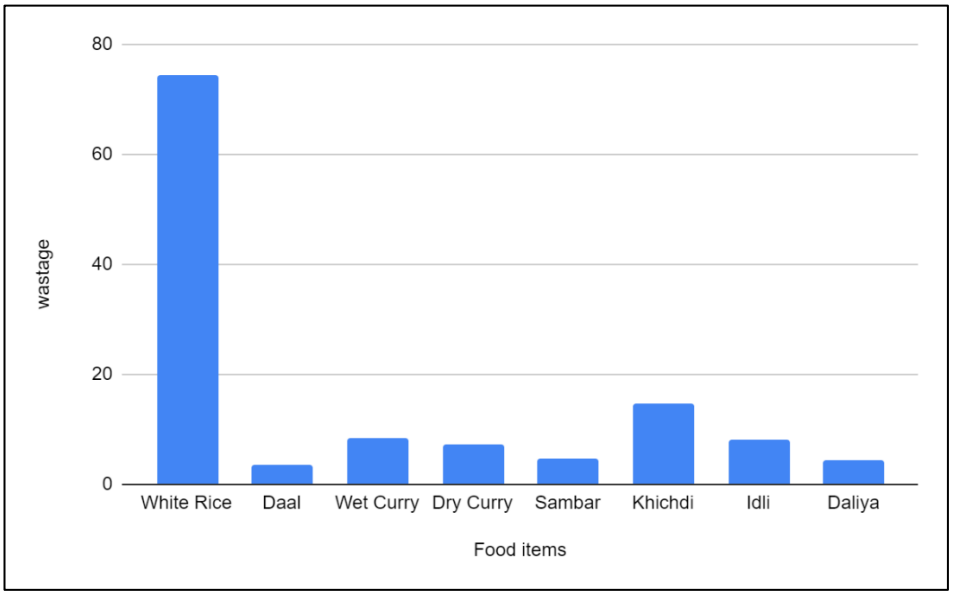


Figure 4.20 – A clustered bar graph depicting the amount of food items wasted in the month of March, April & May 2023.

According to the data, a significant amount of white rice, specifically 74.5 kilograms, was observed to be wasted over a period of 60 days. Additionally, a total of 14.75 kilograms of wastage was noted for other food items during the same two-month period. However, it is worth mentioning that the remaining food items had minimal instances of wastage.

Table 4.4 – Average wastage of food per day.

Food items	White Rice	Dal	Wet Curry	Dry Curry	Sambar	Khichdi	Idli	Daliya
Wastage/ day	1.24	0.059	0.14	0.12	0.08	0.25	0.14	0.08

According to the data, a total of 1.24 kilograms of white rice was observed to be wasted over a period of 60 days. In contrast, the remaining food items showed minimal daily wastage.

The wastage of white rice is due to improper planning of the of the average rice preparation per day.

Discussion

The present research on service TAT and patient satisfaction survey of food and beverages in a hospital contributes to the existing body of knowledge on this topic. By examining the relationship between service TAT and patient satisfaction, as well as the factors influencing patient satisfaction with food and beverages, this study builds upon previous research and adds valuable insights to the field.

In previous studies, similar findings have been reported, indicating a positive correlation between shorter service TAT and higher levels of patient satisfaction. These findings align with the notion that efficient service delivery is crucial in meeting patients' needs and enhancing their overall experience. The present study further reinforces this relationship and provides additional evidence to support the importance of prompt service in improving patient satisfaction.

Moreover, previous research has also highlighted the significance of factors such as food quality, taste, and menu variety in influencing patient satisfaction with food and beverages in a hospital. The findings of the present study are consistent with these previous studies, further emphasizing the need for hospitals to prioritize high-quality and diverse food offerings that meet patients' preferences and dietary requirements.

Barriers faced by the F&B Department-

- Rat traps were not present at the gates.
- Late delivery of meals to patients
- Clock was running 5 mins late.
- Pests were seen sometimes.
- Lack of manpower.
- Delay of delivery due to lift.
- Rice and Dal containers were open while cooking.
- Dustbins were not covered.
- Gloves and masks were not worn by the workers.

CHAPTER – 5

Conclusion

- Service Turnaround Time (TAT): The study revealed that food delivery TAT in the hospital was satisfactory, with 77% of the meals being delivered on time. However, there is still room for improvement as 23% of the meals were delivered late, affecting patient satisfaction.
- Food Wastage: The study highlighted the issue of food wastage in the hospital, particularly with white rice. Effective inventory management systems and portion control strategies should be implemented to reduce food waste and improve sustainability.
- Patient Satisfaction: Overall, the majority of patients expressed satisfaction with the quality, cleanliness, hygiene, and taste of the food and beverages served in the hospital. However, there were areas for improvement, such as variety in food options, delivery timing and consideration of dietary requirements.
- Staff Performance: The feedback from patients indicated positive perceptions of the responsiveness, helpfulness, cleanliness, and politeness of the food and beverage staff. These aspects contribute significantly to patient satisfaction and should be consistently maintained.

Recommendations:

- **Streamline Service procedures**: To reduce TAT, hospitals should evaluate and improve all service procedures, such as order taking, food preparation, and delivery. This can be accomplished by setting up effective channels for communication, coordinating the work schedules of the staff, and, when suitable, using technology to automate procedures like monitors can be placed for each ward instead of coupon token/sticker system.
- **Enhance Menu Planning and Variety**: Hospitals should collaborate closely with dietitians and nutritionists to create menus that offer a variety of attractive and healthful options. Patients' nutritional needs and cultural preferences should be taken into account while designing menus, which should offer options that satisfy a range of preferences.

- **Implement quality control procedures** to ensure that food is produced and served at the highest level of quality. This will improve food quality and taste. Patients' regular input can be gathered to track food quality and implement any necessary changes. Working with chefs or other culinary professionals can improve the flavour and appearance of meals.
- **Implement techniques to reduce food waste**, such as control of portions, better inventory management, and cooperation with nearby food banks or charities to distribute surplus food, in order to reduce food waste. Regular food waste audits and the implementation of waste reduction strategies can help move practises towards being more sustainable.

Hospitals may significantly enhance food and beverage services, raise satisfaction among patients, and lower food waste by putting these concepts into practise. These upgrades assist patient-centred care, enhance the hospital experience for patients, and help their overall health and healing during their stay.

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