



# The Relationship Between Patient Satisfaction from Food Quality and Health Clinic Cleanliness

Pius Weraman<sup>1\*</sup>, Wawan Kurniawan<sup>2</sup>, Devin Mahendika<sup>3</sup>, Sri Handajani<sup>4</sup>, Ernawati Umar<sup>5</sup>

<sup>1</sup>Program Studi Kesehatan Masyarakat, Fakultas Kesehatan Masyarakat, Universitas Nusa Cendana Kupang, Kupang, Indonesia.

<sup>2</sup>Program Studi Ilmu Keperawatan, Fakultas Ilmu Kesehatan, Universitas Yayasan Pendidikan Imam Bonjol, Majalengka, Indonesia.

<sup>3</sup>Program Studi Kedokteran, Fakultas Kedokteran, Puskesmas Bunguran Tengah, Indonesia.

<sup>4</sup>Program Studi Pendidikan Tata Boga, Fakultas Teknik, Universitas Negeri Surabaya, Surabaya, Indonesia.

<sup>5</sup>Program Studi Keperawatan, Fakultas Kedokteran, Universitas Sultan Ageng Tirtayasa, Indonesia.

Received: October 14, 2023

Revised: November 3, 2023

Accepted: December 25, 2023

Published: December 31, 2023

Corresponding Author:

Pius Weraman

[piusweraman@staf.undana.ac.id](mailto:piusweraman@staf.undana.ac.id)

DOI: [10.29303/jppipa.v9i12.5961](https://doi.org/10.29303/jppipa.v9i12.5961)

© 2023 The Authors. This open access article is distributed under a (CC-BY License)



**Abstract:** The correlation between the satisfaction experienced by patients with the quality of nutritional services and the cleanliness of health clinics has an influence on the image of the hospital. This has implications for improving the quality of hospitals in providing food services and the cleanliness of health clinics by serving food that suits the needs of patients. This research was conducted with the aim of knowing patient satisfaction in service, food quality and cleanliness of health clinics. The research method used was a quantitative method with a cross sectional study design where the data sample was 53 people. Sampling was taken by total sampling method where the data will be analyzed using the paired t-test. The results of this research show that there is patient satisfaction with food quality of 75.5% with a p value of 0.064. Practically there is no difference between expectations and reality in this service. The patient satisfaction with the cleanliness of the health clinic was 75.5% at a p value of 0.083, which indicates there is no difference between expectations and reality. Apart from that, satisfaction with the appearance of food was 98.1% with a p value of 0.322. Then the satisfaction of the patients with the taste had a value of 83% with a p value of 0.064. Then the patient's satisfaction with the texture was 94.3% with a p value of 0.083. Then there is a sense of satisfaction with the time the food is served with a value of around 98.1% at a p value of 0.322.

**Keywords:** Cleanliness; Food quality; Patient satisfaction

## Introduction

Patient satisfaction with the quality of nutrition services greatly influences the overall image of the hospital and has implications for increasing hospital income. Several problems that often occur are related to patient satisfaction with the food served, one of which is that food served many times in a short period of time will cause the patient to feel bored. This will cause the patient's appetite to decrease and the patient's food consumption to decrease (Prawiningdyah, 2019). According to research conducted in Indonesia at type B hospitals in Semarang City Regional Hospital, it showed that 92.6% of respondents were dissatisfied with the taste of the food, 53.7% were dissatisfied with the

appearance of the food, and 81.5% were dissatisfied with the variety of menus (Nareswara, 2017). Capra et al. (2015), Aliffianti (2015), Agustina (2016), Rahayu (2018), Rachmawati et al. (2021) shows that patients are very satisfied with food presentation and food service. Trisilawati (2021) found that patient satisfaction with food services in hospitals is influenced by several factors, including: food quality, staff problems, food presentation, physical environment, hunger factors and food quantity and food delivery (distribution). Factors that can influence patient satisfaction are timeliness of food distribution, variety of food menus, taste of food, cleanliness of equipment, and appearance of staff (Siti et al., 2016; Zebua, 2018; Noviyanti, 2020; Tulak, 2020; Sudirman, 2021). Research conducted at RSUP dr. Soeradji Tirtonegoro Klaten stated that 93.3% of patients

## How to Cite:

Weraman, P., Kurniawan, W., Mahendika, D., Handajani, S., & Umar, E. (2023). The Relationship Between Patient Satisfaction from Food Quality and Health Clinic Cleanliness. *Jurnal Penelitian Pendidikan IPA*, 9(12), 10740-10749. <https://doi.org/10.29303/jppipa.v9i12.5961>

liked the appearance of the food, 100% liked the taste of the food, 96.7% rated the food service as good, 90% rated the cleanliness of the cutlery as clean, 86.7% liked the overall acceptability, patient satisfaction, food serving and service, plate waste and the level of satisfaction with patient nutrition services was 96.7% satisfied (Rachmawati & Afifah, 2021).

Satisfaction is a model of the gap between expected (should-be) performance standards and actual performance received by customers (Supriyanto, 2007; Woodruff & Gardial, 1996). Satisfaction is defined as a person's delight in receiving the expected service or product. The success of health-care services is determined by customer satisfaction. According to Nursalam (2016), the notion of service quality related to satisfaction is determined by five characteristics known as "RATER" (responsiveness, assurance, tangible, empathy, and reliability). The essence of the RATER quality idea is to mold attitudes and behavior from service development in order to deliver strong and basic services, so that they may be evaluated based on the quality of service received.

According to Nursalam (2016), patient satisfaction is influenced by 12 elements, including product or service quality, pricing, emotional, performance, aesthetics, product attributes, service, location, facilitation, communication, atmosphere, and visual design. According to Suriyanto (2007), the following elements influence patient satisfaction: product quality, service quality, emotional aspects, price, and cost of acquiring.

Service quality is the degree of providing services efficiently and effectively in accordance with professional standards, service standards that are implemented thoroughly in accordance with patient needs (Nursalam, 2016). Services are health services provided in clinics. Health services aim to overcome a person's health problems. Patients can provide an assessment of existing health services. Services that meet patient expectations will lead to patient satisfaction, but what will happen instead is that patients will lose confidence in getting health services, thereby reducing the number of patient visits and will experience a decrease in the amount of profits they get at the clinic. Health services are a form of service provided by community health centers, clinics and hospitals. One form of health service at community health centers, clinics and hospitals is nursing services. Nursing as an important tool in health services has the responsibility to carry out all nursing actions by providing services according to professional nursing care standards. A nurse is someone who provides nursing care to a patient while the patient is being treated. Nurses, as providers of nursing care services starting at the household, health

center, clinic and hospital level, have a very vital role. The role of the nurse is very important because they always interact, have 24 hour contact with the patient and know the patient's condition during treatment. Service quality influences patient satisfaction in health services, because nursing services determine the quality of health services.

Satisfaction is a model of the difference between expectations (what performance standards should be) and actual customer performance. Patient satisfaction is a subjective value related to the quality of services offered (Woodruff & Gardial, 1996). Patient satisfaction is related to the quality of hospital services. Hospital administration can improve service quality by knowing the level of patient satisfaction. Loyal patients are a low-cost "promotional tool."

Having loyal patients increases the health service institution's selling power as well as its potential to profit, so that cross-subsidies to improve service quality and rewards offered to the human resources of the health service institution will also raise their wellbeing. The health workforce's passion is growing, as is their ability to boost consumer happiness. Patients are Bio-PsychoSocial-Economic-Cultural beings, which means they must fulfill their biological requirements (health), psychological needs (satisfaction), socio-economic needs (housing, clothing, food, and social affiliation), and cultural needs. Whoever knows the individual wants, desires, or expectations of customers or patients has the advantage of engaging with them.

Client satisfaction occurs when the client's requirements and wishes are met; the customer is satisfied. Customer satisfaction is the sense that the product or service obtained meets or exceeds the customer's expectations. Patient satisfaction is important since it is an indicator of the quality of service we deliver, and it is capital for gaining new and loyal patients. If they require the same health services again, loyal patients will return. It is also known that devoted patients will invite others to use the same medical facilities.

Loyal customers are a low-cost promotional technique. Having loyal patients increases such health care facilities' selling power as well as their ability to earn a profit (improved profitability). In this way, mutual subsidies to improve service quality and rewards given to all human resources in health care institutions will be able to improve further, welfare will increase, and enthusiasm for health workers' work will increase, as will the willingness to increase customer satisfaction. Performance will improve where patient care is improved; as a result, patients will be more satisfied, and if the patient need health services again, he will use the same services.

Rates have no effect on loyal clients. Long-term client loyalty will ultimately provide hospital profitability. As a result, pleasure is a valued asset. However, in order to satisfy customers, you must also consider other factors so that there is no over-investment (the expense of attempting to satisfy customers exceeds income). Diagram depicting the relationship between internal and external customer satisfaction. Factors influence patient satisfaction are the product or service's quality, cost, psychological, efficiency, aesthetics, product attributes, service, placement, accessibility, communication, environment, and visual design (Nursalam, 2016).

#### *The Product or Service's Quality*

Patients will be satisfied if the outcome of their evaluation demonstrates that the product or service used is of good quality.

#### *Cost*

The included price is the cost of the goods or service. Price is a significant consideration, but quality is the most crucial in achieving patient happiness. However, this factor has an impact on patients in terms of money incurred; typically, the higher the price of therapy, the higher the patient's expectations.

#### *Psychological*

Patients who are proud of themselves and believe that others admire them tend to be more satisfied, especially if they choose a health care organization that already holds that opinion.

#### *Efficiency*

Speed, convenience, and comfort in how nurses provide medical services, particularly during relatively short recovery times, ease in meeting patient needs, and comfort provided, namely by paying attention to cleanliness, friendliness, and completeness of hospital equipment are manifestations of this performance.

#### *Aesthetics*

Aesthetics refers to the attractiveness of a hospital as seen by the five senses. The friendliness of care and the completeness of hospital equipment are two examples.

#### *Product Attributes*

This item symbolizes physical ownership, which includes structures and decorations. Product qualities include the building's look, cleanliness, and the type of room class supplied, as well as completeness.

#### *Service*

The hospital staff was friendly and the service was quick. Health-care institutions are deemed good if they provide services that prioritize patient needs. The patient's first perception of the nursing services delivered determines satisfaction. For example, providing nursing care requires quick, responsive, and polite service.

#### *Placement*

The location of the room and its surroundings is one of the factors that must be considered while selecting a health care facility. In general, the closer the location is to urban centers or is easily accessible, the easier transportation and nice atmosphere will be the preferred choice for patients.

#### *Accessibility*

The completeness of facilities, for example, health facilities encompassing buildings and infrastructure, parking, nice waiting rooms, and inpatient rooms, influences patient satisfaction assessments. Although this right is not critical in determining patient happiness, the institution does Health services must pay attention to facilities in building consumer-attractive methods.

#### *Communication*

The mechanism for information provided by service providers and complaints from patients is known as communication. Concerns from patients are received rapidly by service providers who assist with patient concerns.

#### *Environment*

The environment is one of security and comfort. A peaceful, pleasant, cool, and beautiful environment will have a significant impact on patient satisfaction during the healing process. Aside from that, not only patients will like it, but visitors will be pleased and will give excellent feedback, impressing visitors to the health care facility.

#### *Visual Design*

Visual design include simple decoration of rooms, buildings, and street designs. Comfort is also determined by the spatial layout and decorating.

There are several factors that influence consumer satisfactions which are broadly categorized into 5 categories, namely product quality, service quality, emotional factor, price, and cost of acquiring. Product quality refers to how satisfied customers are with the items and services they utilize. Performance, reliability, conformity, durability, features, and other factors all influence product quality. Service quality refers to how satisfied customers are with the services they have

received. The service quality dimension, abbreviated as *servqual*, consists of five dimensions: tangible, dependability, assurance, empathy, and responsiveness. The value scale is scaled from 1-4. Scale 1 is unsatisfied, whereas scale 4 is content. The score value is the scale's mean value (score = the number of n measurements taken on the scale).

Emotional Factors refers to confidence and sense of pride in the products, services used compared to competitors. Emotional factor is measured from the perceived best score, meaning the perception of the best quality compared to competitors. The price of a service product is measured from the value of the benefits compared to the costs incurred by consumers. Price is the price of medical services (medical care) that consumers must pay. Cost of Acquiring refers to costs incurred to obtain products or services.

Improving service quality is the degree to which services are provided efficiently and effectively in accordance with professional standards, service standards that are thoroughly implemented in accordance with patient needs, utilizing appropriate technology and research results in nursing services to achieve optimal health. According to Muninjaya (2014), the quality of health services is defined by whether or not users' demands or expectations are met and obtained on time.

Improving service quality is a critical topic in management in both the public and private sectors. This occurs because, on the one hand, the public's desire for improved service quality grows year after year, but, on the other hand, service delivery procedures have not improved significantly. According to Donabedian, service quality may be measured using three variables: input, output, and information. Input refers to all of the resources required to carry out operations, such as staff, funds, medicines, facilities, technology, organization, and information.

A process is a professional engagement between service providers and consumers (patients and members of the general public). Every medical/nursing action must always take the patient's values into account. Every effort is made to reduce the likelihood of recurrence of complaints or discontent in patients. The patient safety program strives to improve both patient safety and service quality. Professional contacts are always mindful of ethical principles regarding patients.

Output is the consequence of health care or nursing services, namely changes in customers, including consumer satisfaction. It is impossible to determine whether good input and processes resulted in good outcomes unless hospital/nursing performance is measured. Emiliana et al. (2021) research at RSU Bahteramas, about food management has been carried

out primarily in compliance with PGRS principles at RSUs in Bahteramas, Southeast Sulawesi Province. There are four indications of the RSU food management system among the 14 indicators, Bahteramas. Bahteramas did not follow PGRS requirements for menu design, ordering and purchasing, cooking, and food distribution.

At Bhayangkara Hospital showed that dissatisfaction was seen from the amount of leftover food from patients which exceeded 25%, while the hospital's Minimum Service Standards (SPM) in Peraturan Menteri Kesehatan RI (2019) were  $\leq 20\%$ . Food service in a hospital is very important, because with food service it is hoped that patients will feel satisfied. Satisfied patients will of course choose the same hospital again if they suffer from illness again and recommend it to their friends or family. Ernalina (2014) discovered a significant relationship between patient satisfaction in the internal medicine room and delivery room at Mandau Duri Regional Hospital and the timeliness of food distribution, menu variations, food taste, cleanliness of equipment, and appearance of food.

Nutrition services in hospitals are generally managed in health clinics Nutrition Installation, which is also where food is served, with 6 nutrition workers in the nutrition installation (1 honorary and 1 civil servant), followed by 4 waiters. The standard number of nutrition workers in type D hospitals is adjusted to service needs, such that with the complexity of nutrition service operations, the number of nutrition workers in health clinics remains insufficient. In general, nutrition workers in hospitals have not received nutrition services training.

The findings of a preliminary research on Clinic inpatients As many as 40% of all patients complained that nurses were less responsive to patient complaints, 20% complained about a lack of communication between nurses and patients, 20% complained that nurse services were less thorough in carrying out nursing actions, and 40% complained that nurses did not introduce themselves to patients. Data on the number of patients hospitalized at clinics in Jember Regency showed an up and down in the number of patients hospitalized with 100 patients in October, 102 patients in November, 94 patients in December, 128 patients in January, 80 patients in February, and 84 patients in April. Patient satisfaction with the services received can be described using data on the number of inpatients.

## Method

The paired t test design is used in this analytical study (Sugiyono, 2018). This study included 53 persons who were all inpatients at health clinics (Notoatmodjo, 2014). Total sampling was employed as the sample

strategy. The Chi square test was performed to analyze the data (Mulyatiningsih, 2011; Sugiyono, 2015).

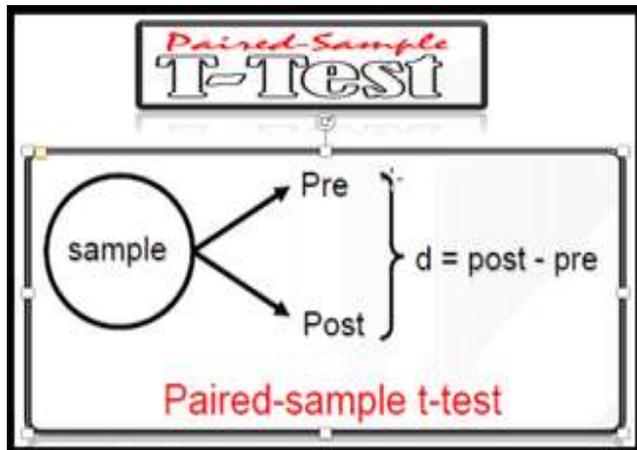


Figure 1. The paired t test design

### Result and Discussion

According to the chart above, the bulk of the 53 respondents were in the 18-29 year age group, with 30 people (56.6%) and a minor number in the 50-59, 70-79, and 80-89 age categories, with 1 person each (1.9%). The majority, 46 people (86.8%), were female, with 7 people (13.2%) being male. The majority, as many as 46 persons (86.8%), were high school graduates, while a tiny proportion, as many as 1 person (1.9%), were elementary school graduates. The bulk of responders were housewives, with 28 persons (52.8%), followed by fishermen and civil servants, each with one person (1.9%).

Table 1. Responden’s Characteristic

Responden’s Characteristic	n	%
Age		
18 - 29	30	56.6
30 - 39	13	24.5
40 - 49	4	7.5
50 - 59	1	1.9
60 - 69	3	5.7
>70	2	3.8
Gender		
Man	7	13.2
Woman	46	86.8
Education		
Elementary	1	1.9
Junior High School	3	5.7
High School	46	86.8
Bachelor	3	5.7
Occupation		
Housewives	28	52.8
Fisherman	1	1.9
Farmer	7	13.2
Civil Servants	1	1.9
Entrepreneur	16	30.2

Based on the table 2, it shows that of the 53 respondents, the majority expect to be very satisfied with the aroma of food (75.5%), the remainder expects to be satisfied with the aroma of food in health clinics (24.5%) and there were no patients who were dissatisfied or dissatisfied with the food. food aroma services at health clinics (0%). Meanwhile, in terms of the reality, the majority of respondents stated that they were very satisfied with the aroma of the food, namely 44 people (83.0%), the remainder stated that they were satisfied with the aroma of food in health clinics as many as 9 people (17.0%) and there were no patients who were less satisfied. (0%), especially dissatisfied with the food aroma service at health clinics (0%).

Table 2. Distribution of Expectations and Reality of Respondents' Satisfaction with Food Aroma

Aroma	Patient’s Hope		Reality		Paired t-test
	n	%	n	%	
Very Satisfied	40	75.5	44	83	0.064
Satisfied	13	24.5	9	17	
Less Satisfied	0	0	0	0	
Not Satisfied	0	0	0	0	
Total	53	100	53	100	

The paired t-test resulted in a p value of 0.064 > 0.05, indicating that there was no significant difference between expectations and reality regarding the aroma of food at health clinics. This indicates that respondents are pleased with the food aroma service since expectations and actuality are not far apart. The observed satisfaction is satisfaction with the aroma of food, which might arouse appetite. This study supports the findings of Rachmawati et al. (2021), who discovered that the aroma of the meal served can generate appetite (100%), the flavor of the food served (100%), and the texture of the side dishes is proper and easy to chew (98.89%). The results of the meal scent analysis revealed that it matched what the patient expected (Jalilah & Prapitasari, 2020).

Food aroma is the aroma spread by food which has a very strong attraction and is able to stimulate the sense of smell so that it can arouse the appetite (Najmah, 2016). The aromas emitted by food vary. Likewise, different ways of cooking food will give different aromas. The aroma emitted by food is a very strong attraction and is able to stimulate the sense of smell, thereby awakening the appetite (Peraturan Menteri Kesehatan RI, 2019). This research is confirmed by the opinion of Rotua & Siregar (2015) that the aroma of food emitted from the food is able to stimulate the sense of smell and increase appetite. The aroma that each food produces is different, this is influenced by different food processing methods.

According to the table 3, the majority of the 53 respondents expect to be very satisfied with the

cleanliness of food (75.5%), the remainder with the aroma of food in the hospital (24.5%), and there are no patients who are less satisfied (0%), particularly with food hygiene services at health clinics (0%), and the fact discovered was that the majority of them (81.1%) indicated that they were extremely satisfied, while the remainder (18.9%) stated that they were satisfied with the cleanliness of the food. This condition demonstrates an improvement in satisfaction from satisfied to highly satisfy. The paired t-test resulted in a p value of  $0.083 > 0.05$ , indicating that there is no significant difference between expectations and reality regarding food hygiene in General Hospitals.

**Table 3.** Distribution of Expectations and Reality of Respondents' Satisfaction with Food Hygiene

Food Hygiene	Patient's Hope		Reality		Paired t-test
	n	%	n	%	
Very Satisfied	40	75.5	44	83	0.083
Satisfied	13	24.5	9	17	
Less Satisfied	0	0	0	0	
Not Satisfied	0	0	0	0	
Total	53	100	53	100	

This study agrees with Rachmawati et al. (2021) findings about the average amount of conformity between expectations and reality. There are some things with a lower appropriateness level than average, such as the side dishes supplied, which are still warm (105.56%). Based on the data gathered, it is clear that the food is of the highest quality and hygiene, as expected. Similarly, Hartiningsih (2014), Fernika (2017), and Agustina et al. (2018) discovered that the cleanliness of the food supplied plays a role in influencing the taste of the food served, whether under too hot or too cold settings, which will impact the sensitivity of the patient's taste buds to food.

This study is supported by Rotua et al. (2015) belief that the cleanliness or temperature of food when presented is a factor that influences the taste of food. However, cleanliness is controlled such that it is not overly hot or chilly. Some foods must be served warm, while others must be served cold. The Indonesian Ministry of Health also stressed the principle of heat, which states that the food that must be served must be maintained hot by paying attention to the cleanliness of the food before being placed in serving utensils, and the heat of the meal must be greater than 600 degrees Celsius.

**Table 4.** Distribution of Expectations and Reality of Respondents' Satisfaction with Food Appearance

Food Appearance	Patient's Hope		Reality		Paired t-test
	n	%	n	%	
Very Satisfied	0	0	1	1.9	0.322
Satisfied	53	100	52	98.1	
Less Satisfied	0	0	0	0	
Not Satisfied	0	0	0	0	
Total	53	100	53	100	

According to the table 4, all 53 respondents expected to be satisfied with the look of the food (100%), and no patients expected to be very satisfied, less content, or dissatisfied with the appearance of the food (0%). Similarly, of the 53 respondents, the majority, namely 52 people (98.1%), stated that they were satisfied with the appearance of the food, the remainder, namely 1 person (1.9%), were very satisfied with the appearance of the food, and there were no patients who were less satisfied and dissatisfied with the appearance of the Health Clinic food (0%).

The paired t-test resulted in a p value of  $0.322 > 0.05$ , indicating that there was no significant difference between expectations and reality regarding the appearance of food in health clinics. This indicates that people are pleased with the overall presentation of the meal service. The meal is provided covered, and it is garnished and appears appealing to consume in order to awaken the hunger.

This study supports the findings of Rachmawati et al. (2021), who discovered that the level of patient satisfaction with food presentation and food service was very high, with the actual average value being higher than the expected average value. The amount of congruence between expectations and reality in the accommodation principle demonstrates that respondents were quite satisfied with the average outcomes of 105.19%. With this average, there are some foods that are less suitable, such as fruit served covered (102.22%). This demonstrates that the food and beverages delivered to patients are always covered to prevent cross-contamination from other substances and are always clean.

Other related research is being conducted at RSUD. According to Nuryani et al. (2020), 81 people (74.3%) answered that the food served was covered, and respondents said they were very satisfied with the hospital service. This was to ensure that the food was not contaminated by dust or insects that entered, affecting the appearance of the food served. The containerization concept states that each type of food is placed in a separate container with a lid to prevent cross contamination.

**Table 5.** Distribution of Expectations and Reality of Respondents' Satisfaction with Food Taste

Food Taste	Patient's Hope		Reality		Paired t-test
	n	%	n	%	
Very Satisfied	40	75.5	44	83.0	0.064
Satisfied	13	24.5	9	17.0	
Less Satisfied	0	0	0	0	
Not Satisfied	0	0	0	0	
Total	53	100	53	100	

According to the table 5, 53 respondents were very satisfied with the taste of the food (75.5%), the rest expected to be satisfied with the taste of the food at the health clinic (24.5%), and there were no patients who were dissatisfied or dissatisfied with the taste of the food in health clinics (0%). Similarly, in reality, the majority of respondents, 44 people (83.0%), stated that they were very satisfied with the taste of the food, the remainder, as many as 9 people (17.0%), and there were no patients who were less satisfied and dissatisfied with the taste of food at the health clinic (0%).

The paired t-test resulted in a p value of 0.064 > 0.05, indicating that there was no significant difference between expectations and reality about the taste of meals at the Health Clinic. This indicates that respondents were extremely satisfied with the hospital's services. Respondents were highly delighted with the flavor of the meal given at the Health Clinic since the veggies and side dishes tasted wonderful. This study supports the findings of Rachmawati & Afifah (2021), who discovered that the flavor of the food supplied was (100%) pleased. However, this research contradicts the findings of a study conducted by the nutrition research and development section at H. Adam Malik General Hospital in Medan, which found that 52.3% of patients did not finish the food menu and 53.1% expressed an unpleasant taste in the food menu served by the installation.

Taste is one of the properties of food, drinks, and spices that can be defined as a collection of perceptions resulting from sensory stimulation combined with digestive stimulation in the form of a product impression in the mouth (Peraturan Menteri Kesehatan RI, 2019). According to Liber et al., flavor can improve a patient's appetite, which can lead to increased food consumption and influence the occurrence of food waste. The presence of food spices, which are flavoring compounds derived from natural components, is one of the aspects that contribute to the delightful taste of food. Spices added to cooking seek to offer flavor. Herbs and spices are flavoring elements that are used to meals to add flavor and aroma depending on the recipe. Food ingredient evaluation differs according to a person's enjoyment or taste. Ratings will differ based on experience; for example, the taste of the same sort of

food will vary from person to person. The appearance of the meal when served and the flavor of the food when consumed are the two most important features of cuisine.

According to the table 6, all 53 respondents (100%) expect to be satisfied with the texture of the food. whereas in reality, the majority, namely 50 people (94.3%), stated that they were satisfied with the texture of the food, the remainder, namely 3 people (5.7%), were very satisfied with the texture of the food, and there were no patients in the clinic who were dissatisfied or dissatisfied with the texture of the food.

**Table 6.** The Distribution of Expectations and Reality of Food Texture Satisfaction among Respondents

Food Texture	Patient's Hope		Reality		Paired t-test
	n	%	n	%	
Very Satisfied	0	0	3	5.7	0.083
Satisfied	53	100	50	94.3	
Less Satisfied	0	0	0	0	
Not Satisfied	0	0	0	0	
Total	53	100	53	100	

The paired t-test results revealed a p value of 0.083 > 0.05, indicating that there was no significant difference between expectations and reality regarding food texture, implying that respondents were quite satisfied with food texture services at health clinics. Food has a soft texture, such as rice, while fish and vegetables are served cooked. Food texture is a component that can influence food quality since the consistency of the food influences the sensitivity of the sense of taste. Foods with a dense or thick texture trigger the taste senses more gradually.

This research is consistent with the findings of Rachmawati et al. (2021), who discovered that the texture of side dishes was correct and easy to chew (98.89%), but the results of the analysis of statements about the texture of side dishes revealed that the level of compliance with patient expectations was met at 98.89%, so it was included in the dissatisfied category because the patient considered the texture of the side dish to be difficult for the patient to chew, so it was included in. This study contradicts the conclusions of Rumkital. According to Dr. Ramelan Surabaya, respondents ranked the texture of animal side dishes at breakfast as less than appropriate at 5.8%, appropriate at 47.1%, and highly suitable at 47.1%. At lunch, 11.8% of respondents thought the texture of animal side dishes was less suitable, 50% thought it was suitable, and 38.2% thought it was very suitable.

**Table 7.** Distribution of Respondents' Satisfaction with Food Serving Time Expectations and Reality

Food Serving Time	Patient's Hope		Reality		Paired t-test
	n	%	n	%	
Very Satisfied	53	100	52	98.1	0.322
Satisfied	0	0	1	1.9	
Less Satisfied	0	0	0	0	
Not Satisfied	0	0	0	0	
Total	53	100	53	100	

Based on the table 7, it shows that of the 53 respondents, 53 people (100%) expected to be satisfied with the food serving time and 53 people (100%) were very satisfied and there were no expectations of satisfied or less satisfied patients. Likewise, the reality is that the majority of respondents stated that they were very satisfied with the food serving time, namely 52 people (98.1%), the remainder were satisfied with the food serving time, namely 1 person (1.9%) and there were no expectations of patients who were less satisfied. and dissatisfied with the time food is served at the health clinic (0%).

The results of the paired t-test obtained a p value of  $0.322 > \alpha (0.05)$ , so there was no significant difference between expectations and reality regarding food serving times, which means that respondents were satisfied with food serving times at health clinics. Food serving times are in the morning at 07.00, afternoon at 12.00 and evening at 16.00 and snack serving times are at 10.00 and 16.00 WIT. Based on the research results, it is proven that the food distribution time and menus and portions served are as expected. This must be maintained because in general the level of implementation is in accordance with the patient's performance and expectations so that it satisfies the patient.

The findings of this study are consistent with the findings of Nurqisthy et al. (2016) at Airlangga University Hospital, who found that 67.6% of patients were satisfied with the timeliness of distributing or serving food, while 32.4% were unsatisfied. Similarly, Rachmawati et al. (2021) found that they were pleased with the food serving time. In the principles of proper presentation, the average level of agreement between expectations and reality is 105.83%. This demonstrates that the patient is highly satisfied.

This study is supported by Rotua et al. (2015) hypothesis that the patient's meals must be delivered directly to the inpatient room. According to Rotua et al. (2015), the timing of serving food has a significant impact on the patient's appetite. Food must be served on time for breakfast, lunch, and dinner. According to Utari (2019), food distribution time is a series of activities for distributing food to patients in inpatient rooms based on the number of portions and varieties of food so that they can satisfy the consumers served.

## Conclusions

There is no difference between expectations and reality for food aroma, implying that patients are quite satisfied with food aroma in the health clinic. There is no gap between expectations and reality when it comes to food hygiene, implying that patients are very satisfied with food hygiene at health clinics. There is no difference between expectations and reality in terms of food presentation, indicating that patients are content with the appearance of food in the health clinic. There is no difference between expectations and reality in terms of food taste, indicating that patients are quite satisfied with the taste of food at the health clinic. There is no discrepancy between expectations and reality regarding food texture, indicating that patients in the health clinic are content with the meal texture. There is no difference between expectations and reality in terms of food distribution accuracy, implying that patients are quite satisfied with food distribution accuracy in health clinics.

## Acknowledgments

Thank you to all parties, especially my institution.

## Author Contributions

Pius Weraman and Wawan Kurniawan: Conceptualisation, methodology, formal analysis, writing original draft, visualisation, validation, writing, review and editing. Devin Mahendika and Sri Handajani: Conceptualisation, methodology, formal analysis, validation, writing, review and editing, supervision. Ernawati Umar: Conceptualisation, methodology, formal analysis, validation, writing, review and editing, supervision.

## Funding

The research received no specific grant from any funding agency in public, commercial or non-for-profit sectors.

## Conflicts of Interest

The authors declare no conflict of interest.

## References

- Agustina, F. (2016). *The Relationship between Food Acceptability and Level of Satisfaction with Nutrition Services for Inpatient Hypertension Patients at Dr 47 Gorontalo Regional Hospital* (Skripsi). Universitas Muhammadiyah Surakarta. Retrieved from <https://eprints.ums.ac.id/47007/>
- Agustina, L., & Primadona, S. (2018). The Relationship between Food Taste and Food Hygiene and Animal Side Dish Leftovers in Pediatric Patients in the RUMKITAL Inpatient Room Dr. Ramelan Surabaya. *Anumerta Nutr*, 2(3), 245-253. <https://doi.org/10.20473/amnt.v2i3.2018.245-253>

- Aliffianti, R. (2015). *Level of Patient Satisfaction with Food Services at 'Aisyiyah Purworejo Hospital* (Thesis). Faculty of Engineering, Yogyakarta State University. Retrieved from <https://eprints.uny.ac.id/34678/2/Rosma%20Aliffianti%20-%2008511241022.pdf>
- Capra, S., Wright, O., Sardie, M., Bauer, J., & Askew, D. (2015). The Acute Hospital Foodservice Patient Satisfaction Questionnaire: The Development of A Valid and Reliable Tool to Measure Patient Satisfaction with Acute Care Hospital Foodservice. *Foodservice Research International*, 16, 1-14. <https://doi.org/10.1111/j.1745-4506.2015.00006>
- Emiliana, E., Dhesa, D. B., & Mayangsari, R. (2021). Analysis of the Implementation of Inpatient Nutrition Services at the Bahteramas General Hospital, Southeast Sulawesi Province. *Health Work Scientific Journal*, 2(01), 16-24. Retrieved from <https://stikesks-kendari-e-journal.id/JIKK/article/view/445>
- Ernalina, Y. (2014). Factors Associated with Patient Satisfaction in the Internal Medicine Room and Maternity Room with Patient Food Services at Mandau Duri Regional Hospital. *STIKes Nutrition Journal Tuanku Tambusai Riau*, 34(3), 1-10. Retrieved from <https://staffnew.uny.ac.id/upload/132296045/lainlain/buku-riset-terapan-apri.pdf>
- Fernika, O. S. (2017). *The Relationship between Timeliness of Food Serving, Food Appearance, and Food Taste with Satisfaction of Class II and III DM Inpatients at Siti Khadijah Islamic Hospital Palembang in 2017*. Palembang: Palembang Health Polytechnic. Retrieved from <https://repository.poltekkespalembang.ac.id/items/show/687>
- Hartiningasih, D. (2014). *The Relationship between Taste, Portion Size, and Feeding Time on Leftover Soft Food in Class 3 Patients at Berkah Regional Hospital, Pandeglang Regency* (Publication manuscript). Esa Unggul University Jakarta. Retrieved from <https://digilib.esaunggul.ac.id/hubungan-citarasa-besar-porsi-dan-waktupemberian-makan-terhadap-sisa-makanan-lunak-pasien-kelas-3-dirsud-berkah-kabupaten-pandeglang-2297.html>
- Jalilah, N. H., & Prapitasari, R. (2020). *Textbook of Reproductive Health and Family planning*. Bandung: Adab Publishers. Retrieved from <https://penerbitadab.id/kesehatan-reproduksi-dan-keluarga-berencana/>
- Mulyatiningsih, E. (2011). *Applied Research in Education and Engineering*. Yogyakarta: UNY Press.
- Najmah, N. (2016). *Epidemiology for Public Health Students*. Jakarta: Rajawali Press.
- Nareswara, A. S. (2017). Hubungan Kepuasan Pasien dari Kualitas Makanan Rumah Sakit dengan Sisa Makanan di RSUD Kota Semarang. *Ilmu Gizi Indonesia*, 1(1), 34-39. <https://doi.org/10.35842/ilgi.v1i1.11>
- Notoatmodjo, N. (2014). *Health Research Methods*. Jakarta: Rineka Cipta.
- Noviyanti, N. (2020). *Professional Service Factors on Patient Satisfaction*. Pasuruan: CV. Qiara Media Publisher.
- Nurqisthy, A., Andriana, M., & Muniroh, L. (2016). The Relationship between Food Service Satisfaction and Patient Energy and Protein Adequacy Levels at Airlangga University Hospital, Surabaya. *Indonesian Nutrition Media Journal*, 1(2), 20-33. <https://doi.org/10.20473/mgi.v1i1.32-39>
- Nursalam, N. (2016). *Metodologi Penelitian Ilmu Keperawatan*. Jakarta: Selemba Medika.
- Nuryani, N., Ramadhani, F., & Lestari A. (2020). Inpatient Satisfaction with the Quality of Food Services at the Dr. Hospital's Nutrition Installation. M.M Dunda Limboto. *Ghidza: Journal of Nutrition and Health*, 4(2), 166-180. <https://doi.org/10.22487/ghidza.v4i2.165>
- Peraturan Menteri Kesehatan RI. (2019). Standar Teknis Pemenuhan Mutu Pelayanan Dasar pada Standar Pelayanan Minimal Bidang Kesehatan. Jakarta: Kementerian Kesehatan RI. Retrieved from [http://hukor.kemkes.go.id/uploads/produk\\_hukum/PMK\\_No\\_4\\_Th\\_2019\\_ttg\\_Standar\\_Teknis\\_Pelayanan\\_Dasar\\_Pada\\_Standar\\_Pelayanan\\_Minimal\\_Bidang\\_Kesehatan](http://hukor.kemkes.go.id/uploads/produk_hukum/PMK_No_4_Th_2019_ttg_Standar_Teknis_Pelayanan_Dasar_Pada_Standar_Pelayanan_Minimal_Bidang_Kesehatan)
- Prawiningdyah, D. (2019). The Rice Diet Menu Choices Served Influence the Satisfaction of VIP Patients at the Regional Hospital of Southeast Sulawesi Province. *Indonesian Journal of Clinical Nutrition*, 7(3), 112-120. <https://doi.org/10.22146/ijcn.17755>
- Rachmawati, A. D., & Afifah, C. A. N. (2021). Level of Satisfaction of Inpatients with Food Presentation and Service in Hospitals. *Gorontalo Journal of Nutrition and Dietetics*, 1(2), 37-49. <https://doi.org/10.33992/jig.v1i2i3.2158>
- Rahayu, R. (2018). *The Influence of Food Service on Patient Satisfaction at the Aceh Taming Regional General Hospital* (Thesis). University of North Sumatra, Medan. Retrieved from <https://repositori.usu.ac.id/handle/123456789/36067>
- Rotua, M., & Siregar, R. (2015). *Manajemen Sistem Penyelenggaraan Makanan Institusi Dasar*. Jakarta: Kedokteran EGC.
- Siti, M., Zulpahiyana, Z., & Indrayana, S. (2016). Nurses' Therapeutic Communication Is Related to Patient Satisfaction. *Indonesian Journal of Nursing and*

- Midwifery*, 4(1), 30-34.  
[http://dx.doi.org/10.21927/jnki.2016.4\(1\).30-34](http://dx.doi.org/10.21927/jnki.2016.4(1).30-34)
- Sudirman, I. (2021). *Implementation of Market Orientation in Hospitals Examined from Multi-Perspective Strategy*. Bogor: PT Publisher IPB Press. Retrieved from <https://inlislite.lebakkab.go.id/opac/detail-opac?id=11249>
- Sugiyono, S. (2015). *Non Parametric Statistics for Research*. Bandung: Alfabeta. Retrieved from <https://inlislite.uin-suska.ac.id/opac/detail-opac?id=24738>
- Sugiyono, S. (2018). *Quantitative, Qualitative, and R&D Research Methods*. Bandung: Alfabeta. Retrieved from <https://inlislite.uin-suska.ac.id/opac/detail-opac?id=22862>
- Supriyanto, A. (2007). *Pengantar Teknologi Informasi*. Jakarta: Salemba Infotek.
- Suriyanto, S. (2007). *Aplikasi Quality Function Deployment pada PT. Mitra Indra Sejahtera (S1 Thesis)*. Universitas Muhammadiyah Yogyakarta.
- Trisilawati, E. (2021). Patient Satisfaction with Hospital Food Services. *Journal of Health and Therapy*, 1(1), 15-26. Retrieved from <https://journal.mrcrizquna.com/index.php/jht/article/view/20>
- Tulak, G. T. (2020). *Nursing Management for Vocational Education*. Surabaya: Penerbit Tahta Media Group. Retrieved from [https://scholar.google.co.id/scholar?hl=id&as\\_sdt=0,5&cluster=2028245513706524197](https://scholar.google.co.id/scholar?hl=id&as_sdt=0,5&cluster=2028245513706524197)
- Utari, R. (2019). *Evaluation of Food Services for Inpatients at the Gondangrejo Karanganyar Community Health Center (Thesis)*. Surakarta: Universitas Muhammadiyah Surakarta. Retrieved from [https://eprints.ums.ac.id/5721/1/J\\_300\\_060\\_026.PDF](https://eprints.ums.ac.id/5721/1/J_300_060_026.PDF)
- Woodruff, R. B., & Gardial, S. F. (1996). *Know Your Customer: New Approaches to Understanding Customer Value and Satisfaction*. Cambridge, MA: Blackwell Publications.
- Zebua, M. (2018). *Marketing Health Services Products*. Yogyakarta: Deepublish. Retrieved from [https://books.google.co.id/books/about/Pemasaran\\_Produk\\_Jasa\\_Kesehatan.html?id=-dyCDwAAQBAJ&redir\\_esc=y](https://books.google.co.id/books/about/Pemasaran_Produk_Jasa_Kesehatan.html?id=-dyCDwAAQBAJ&redir_esc=y)