

## The Relationship Between Food Appearance And Taste With The Acceptability Of Soft Food Menus In Inpatient Hospital Patients

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Article Info	ABSTRACT
<b>Keywords:</b> Food Taste, Food Acceptability, Food Appearance	Acceptability is a measure of satisfaction with food and an individual's ability to finish the food served. Eating habits are one of the internal factors affecting food acceptability, while food appearance and taste are external factors. The purpose of this study is to determine the relationship between food appearance and taste with the acceptability of soft foods in inpatients at Pertamina Balikpapan Hospital. This observational study uses a cross-sectional method. The sample was determined using a systematic accidental sampling method and calculated using Slovin's formula, resulting in a sample size of 60 respondents. Data collection was conducted through interviews and questionnaires. Bivariate statistical analysis in this study used the Chi-square test, yielding $p=0,008$ for food appearance and acceptability, and $p=0,122$ for food taste and acceptability. The conclusion is that there is no significant relationship between food appearance and acceptability ( $p=0,008$ ) and no significant relationship between food taste and acceptability ( $p=0,122$ ). The results indicate that there is no correlation between food appearance and taste with patient acceptability because patients have been educated on the importance of finishing the food served in the hospital to support the healing process.
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### INTRODUCTION

Nutrition services in hospitals are tailored to the patient's condition based on clinical status, nutritional status, and metabolic status. The patient's nutritional status significantly affects the healing process, while the course of the disease can impact the patient's nutritional status. Insufficient nutritional intake for organ repair can worsen the patient's condition. Therefore, nutritional therapy is needed to aid recovery[1][2][3]

The organization of hospital nutrition services refers to the Ministry of Health Decree No. 983 of 1998 concerning Hospital Organization and the Ministry of Health Regulation No. 1045/MENKES/PER/XI/2006 on Hospital Organization Guidelines within the Ministry of Health. Hospital Nutrition Service activities include food service, inpatient nutrition care, nutrition counseling and referrals, as well as applied nutrition research and development[4][5].

The acceptability of soft food is measured by the amount of soft food consumed by patients, observed from the leftover food not eaten by the patients. Soft food is provided to patients who physically and psychologically cannot consume regular food. The drawback of

soft food is its softer form and texture compared to regular food due to its high water content, resulting in a larger volume, and the spices used should not be stimulating[6][7][8]. This often makes the food bland, which can affect patient acceptability, ultimately leaving leftovers on the plate. According to the Hospital's Minimum Service Standards, the indicator of good food acceptability is when more than 20% of the served portion is consumed, and it is considered poor if 20% or less of the served portion is consumed[9]

There are two factors affecting food acceptability: internal factors, which include age, gender, physical condition, and eating habits, and external factors, such as food color, food shape, food presentation, and cleanliness of utensils. The patient's food acceptability impacts their nutritional status. Low food acceptability negatively affects the patient's nutritional status and recovery, increasing the risk of clinical malnutrition during the hospital stay due to unconsumed food leading to unmet nutritional needs[10]

Food taste influences the patient's acceptability of the served food. Food taste includes food color, shape, portion, presentation, flavor, aroma, seasonings, serving temperature, and doneness according to the type of food served. Moreover, taste is a dominant factor affecting patient food acceptability[11]

Previous research by Laksminingsih, Indraswari, and Mutiara (2020) on patient satisfaction with soft food showed that the average food waste was 24.64%, with only 8.74% of patients finishing their meals. Additionally, research by Handayani and Srimati[12] on food acceptability revealed an average food waste of 17.14%, meeting the hospital's minimum standards, with more leftovers in staple foods and vegetables at 25.9% and 21.9%, respectively. Breakfast time had the least amount of food waste compared to lunch and dinner.

Based on the above background, the researcher is interested in studying the acceptability of soft food in inpatients, as daily observations still show food leftovers in the inpatient ward. This can be used as an evaluation material for the menu at Pertamina Balikpapan Hospital, considering that no previous research has been conducted on this subject at the hospital. This study will be beneficial for improving food services in the hospital.

## METHOD

This research is an observational study using a cross-sectional method. Sample determination was done using systematic accidental sampling and calculated using the Slovin formula. The study was conducted at Pertamina Balikpapan Hospital with a sample size of 60 respondents. Data collection was carried out through interviews and questionnaires. The dependent variable in this study is food acceptability, collected using the interview method and by filling out the Comstock form to observe respondents' food leftovers. Calculations were made for each type of dish. Food acceptability was then categorized as good if the acceptability was  $> 20\%$  or poor if the acceptability was  $\leq 20\%$ [13].

The independent variables in this study are food appearance and taste. Data on respondents' assessments of food appearance (color, shape, consistency, portion) were obtained through a questionnaire, with scores for each aspect of color, shape, consistency,

and portion being determined by a score calculation of 1-10. The criteria were set as good if the aspect score was  $> 7$  and poor if the aspect score was  $\leq 7$ .

Data processing and analysis were conducted using computer software, including univariate analysis to describe the characteristics of each variable and presented in the form of frequency distribution tables. The univariate analysis in this study includes age, gender, food appearance, food taste, and food acceptability. Furthermore, the normality test of the data was conducted using the Kolmogorov-Smirnov test, resulting in normally distributed data. Therefore, bivariate analysis was carried out using the Chi-Square test with a significance level of 0.05 and a confidence level of 95% to determine the relationship between the variables of food appearance and food taste with food acceptability.

## RESULTS AND DISCUSSION

### Results

The univariate results of respondents in this study are presented in table 1 below:

**Table 1** Frequency Distribution

Variable	n	%
Age		
< 40 years	27	45
$\geq 40$ years	33	55
Gender		
Man	38	63
Woman	22	37
Food Acceptance		
Good	37	62
Not good	23	38
Food Appearance		
Good	38	63.3
Not good	22	36.7
Food Taste		
Good	38	63.3
Not good	22	36.7

Table 1 shows that the majority of respondents aged  $\geq 40$  years were 33 respondents (55%), the respondents in this study were mostly male, 38 respondents (63%), the respondents' food tolerance was good, 37 respondents (62%) , based on the results of assessing food appearance and food taste, it was found that the majority of respondents' food appearance was good, 38 respondents (63.3%) and 38 respondents' food taste was good (63.3%).

**Table 2** Relationship Between Food Appearance And Acceptability Of Soft Foods

Food Appearance	Acceptability				Total		<i>P-value</i>
	Good		Not good		n	%	
	n	%	n	%			
Good	47	87.0	7	13.0	54	100	0.008
Not good	2	33.3	4	66.7	6	100	
Amount	49	81.7	11	18.3	60	100	

Based on table 2, the results show that the majority of respondents chose good food taste and good food acceptability as many as 39 respondents (86.7%), and those who chose good food taste but poor acceptability were 6 respondents (13.3%) Meanwhile 10 respondents (66.7%) chose the taste of the food as bad but its acceptability was good, and 5 respondents (33.3%) chose the appearance of the food and its acceptability as poor. The statistical test results obtained a p-value = 0.122 which shows that there is no significant relationship between food taste and food acceptability.

**Table 3** Relationship Between Food Taste And Acceptability Of Soft Foods

Food Taste	Acceptability				Total		<i>P-value</i>
	Good		Not good		n	%	
	n	%	n	%			
Good	39	86.7	6	13.3	45	100	
Not good	10	66.7	5	33.3	15	100	0.122
Amount	49	81.7	11	18.3	60	100	

Table 3 shows the results that the majority of respondents chose good food taste and good food acceptability as many as 39 respondents (86.7%), and 6 respondents chose good food taste but poor acceptability as many as 6 respondents (13.3%). There were 10 respondents (66.7%) who chose the taste of the food as poor but its acceptability was good, and 5 respondents (33.3%) chose the appearance of the food and its acceptability as poor. The statistical test results obtained a p-value = 0.122 which shows that there is no significant relationship between food taste and food acceptability.

## Discussion

### The Relationship Between Food Appearance and Food Acceptability

Based on the bivariate results, a p-value of 0.008 was obtained, indicating that there is no significant relationship between food appearance and the acceptability of soft food in inpatients at Pertamina Balikpapan Hospital. The appearance of the food served greatly influences the sense of sight. The sense of sight is very sensitive to food color, shape, texture/consistency, and portion size. Attractive color combinations, good shape, well-matched textures, consistency, and the portion size of the food served significantly affect the consumer's appetite and can also enable the consumer to enjoy the food served[14].

This study is in line with research conducted by Agustina[15] at RSUP dr. Soeradji Tirtonegoro Klaten, with a p-value of 0.23, indicating that there is no relationship between food appearance and patient satisfaction levels. This study also aligns with research by

Andriyani [16], which stated that there is no significant relationship between food appearance and food acceptability, with a p-value of 0.1000. Another study that aligns with this one, conducted by Sunarya and Puspita[17], found no relationship between food appearance and staple food acceptability, with a p-value of 1.000.

The results of this study show no relationship between food appearance and the acceptability of soft food. This is because patients at Pertamina Balikpapan Hospital have been educated by healthcare providers (doctors, nurses, and nutritionists) that food is a crucial pillar of treatment essential for recovery. As a result, patients believe that even if the appearance of the food is sometimes less appealing, they must still consume it to support the treatment process. Additionally, internal factors such as the patient's physiological condition (cough, fever), decreased appetite, and stress due to illness or other conditions contribute to the poor food acceptability among patients.

### **The Relationship Between Food Taste and Food Acceptability**

Based on the bivariate results of this study, a p-value of 0.122 was obtained, indicating that there is no significant relationship between food taste and the acceptability of soft food in inpatients at Pertamina Balikpapan Hospital. Taste is a complex sensation caused by various senses (smell, taste, sight, touch, and hearing) when consuming food. Taste indicators include aroma, tenderness, doneness, temperature, and seasoning[11] (Meriana, 2023).

This study is in line with research conducted by Agustina[15], which showed no meaningful relationship between food appearance and taste and the amount of leftover food in the pediatric inpatient ward at Dr. Sobirin Musi Rawas Hospital, Bengkulu ( $p = 0.191$ ). This study also aligns with research by Rijadi [18], titled "The Relationship Between Food Taste, Food Appearance, and Other Factors on the Acceptability of Soft Food in Adult Patients in the General Care Building of RSPAD Gatot Soebroto Jakarta," which showed no meaningful relationship between food presentation and taste and appearance, with a p-value of 1.000. This is related to the respondents' attitude of finishing the food provided by the hospital even though the taste is still lacking, in order to achieve the treatment's goal quickly.

## **CONCLUSION**

The research results show that there is no significant relationship between food appearance and taste with the acceptability of soft food menus at Pertamina Balikpapan Hospital. This is due to the nutritional education provided to patients, emphasizing the importance of finishing the served food as part of their recovery process. As a follow-up, it is recommended to pay more attention to menu variety and cycles to enhance patients' acceptance of the food served during their stay at Pertamina Balikpapan Hospital. It is hoped that the cooks can create more variety and flavors that align with patients' preferences, thereby increasing their satisfaction with the given menu. Additionally, it is crucial for food handlers to receive adequate training in food service management to ensure optimal quality and service.

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