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Analysis of Factors Influencing Inpatient Satisfaction with Nutrition Services at RSKIA Sawojajar Bogor

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ABSTRACT

Patient satisfaction with hospital nutrition services is a crucial indicator of healthcare quality and recovery outcomes. Despite its importance, many hospitals still face challenges in meeting patient expectations regarding food quality and nutrition service delivery. This study aims to examine the factors affecting inpatient satisfaction with nutrition services. Using a descriptive-analytic method with a cross-sectional approach, the study involved 132 inpatients who met specific inclusion criteria. Data were collected through a structured questionnaire covering two main variables: patient perception of hospital food services and satisfaction with nutrition services, measured using a 4-point Likert scale. The results showed that most patients rated their perceptions and satisfaction positively, though some aspects received lower ratings from a small group of respondents. Statistical analysis revealed associations between satisfaction levels and demographic characteristics such as age, education, occupation, class of care, and length of stay, with varying levels of influence. Overall, food quality, service responsiveness, and personalized nutrition delivery emerged as key factors shaping patient satisfaction. This study provides valuable insights for improving nutrition service quality and promoting patient-centered care. Theoretically, it contributes to the understanding of healthcare service quality in nutrition services, while practically, it offers evidence-based recommendations for hospital management to enhance service delivery and patient care outcomes.

Keywords: hospital food quality, inpatient satisfaction, nutrition service, patient perception, RSKIA Sawojajar Bogor

INTRODUCTION

Hospitals have a close relationship with health services; therefore, it is necessary to align patient perceptions and expectations. The services offered in hospitals must meet patients' needs. The main function of a hospital is to fulfill patients' expectations of the health services provided to ensure service quality. One indicator of a hospital's success in terms of nutritional services is a high level of patient satisfaction with the food they receive. Patient satisfaction with the food provided makes a positive contribution to the healing process (Nurhafidza et al., 2024).

One of the health services in hospitals that plays an important role in supporting patient recovery is the nutrition service unit. According to the Regulation of the Minister of Health of the Republic of Indonesia Number 26 of 2013 concerning the Implementation of the Work and Practice of Nutrition Personnel, nutrition services are efforts to improve food and dietetics for communities, groups, individuals, or clients through a series of activities that include collection, processing, analysis, conclusion, recommendation, implementation, and evaluation of nutrition, food, and dietetics to achieve optimal health status in both healthy and sick conditions. Recent studies have emphasized that nutrition services are not merely about food

provision but encompass comprehensive nutritional care addressing individual patient needs, preferences, and therapeutic requirements (Osman et al., 2021; Gillis et al., 2021).

Nutrition and dietetic services are crucial aspects that play an important role in every hospital's function. The nutrition unit not only focuses on food provision but also prepares nutritional services according to patient needs. Good nutritional status can positively affect the patient's healing process. Patient satisfaction with health services must be assessed to improve hospital service quality. Good nutrition plays an essential role in patient health and treatment and is an integral part of therapy (Vafaeenasab et al., 2021). Furthermore, Furness et al. (2023) demonstrated that the patient mealtime experience significantly impacts overall satisfaction with hospital care, suggesting that nutrition service quality extends beyond nutritional adequacy to include sensory, environmental, and interpersonal dimensions.

Research conducted by Permadi and Padmiari (2021) at Puri Raharja Hospital found that 88.4% of patients reported a good level of satisfaction with nutrition unit services, exceeding the standard satisfaction threshold of ≥ 85%. Patients' perceptions of food taste, appearance, and presentation can affect satisfaction with services provided by nutrition installations (Ministry of Health, 2022). However, Pibriyanti et al. (2024) found significant variations in satisfaction levels across different hospital types and patient demographics, indicating that factors beyond food quality influence overall satisfaction.

Patient satisfaction with food services emphasizes managing patient expectations, ensuring high-quality service, and prioritizing individual preferences and needs (Simanjuntak et al., 2020). A study conducted by Tonjang and Thawesaengskulthai (2019) in Thailand found that food misserving cases reached 37.4%, representing the highest patient complaint among all hospital issues. Research by Lestari et al. (2023) stated that the lack of variation in food—such as unattractive colors, oversized portions, insufficient warmth, and repetitive menus—could increase patient complaints regarding hospital nutrition services. Setiawan et al. (2024) further identified through Importance-Performance Map Analysis that while hospitals may perform well in nutritional adequacy, they often fall short in aspects such as food temperature, menu variety, and presentation aesthetics, which are highly valued by patients.

Patients' perceptions of the food served are among the factors influencing their satisfaction with nutrition installation services. Health services provided to patients should not discriminate; however, perceptions may differ among patients with varying profiles (Girsang, 2021). According to Nurhafidza et al. (2024), patients who find their food unattractive tend to have a lower appetite and often do not finish their meals. Setiawan et al. (2024) reaffirmed through Importance-Performance Map Analysis that despite achieving nutritional adequacy, hospitals often underperform in food temperature, menu diversity, and presentation quality, factors rated as highly important by patients.

Patients receiving adequate nutritional intake can recover faster because their immune systems become stronger. The composition of appropriate nutrients supports patient recovery. Therefore, hospitals should conduct periodic evaluations to ensure that patients' nutritional intake aligns with their specific needs (Arief et al., 2023).

Rumah Sakit Khusus Ibu dan Anak (RSKIA) Sawojajar is a hospital that serves and accommodates referrals from midwives and other clinics. Based on satisfaction data from the nutrition section's suggestion box in April 2023, 75% of patients reported dissatisfaction with the nutrition services provided at RSKIA Sawojajar Bogor. This dissatisfaction is also reflected

in the high volume of food waste and uneaten meals. Given these conditions, the researcher is interested in conducting a study titled Analysis of Factors Influencing Inpatient Satisfaction with Nutrition Services at RSKIA Sawojajar Bogor to determine the factors affecting inpatient satisfaction with hospital nutrition services.

This study aims to identify the factors influencing inpatient satisfaction with nutrition services at RSKIA Sawojajar Bogor. Specifically, it seeks to describe the distribution of patient characteristics and satisfaction levels and analyze relationships between age, education level, occupation, length of stay, and class of care with patient satisfaction toward nutrition services. Additionally, it aims to determine the dominant factors affecting patient satisfaction with hospital nutrition services. Theoretically, this study is expected to contribute scientifically to improving the quality of nutrition services for both inpatient and outpatient care at RSKIA Sawojajar Bogor. Practically, the findings are anticipated to serve as input and evaluation material for the hospital in formulating policies that enhance the quality of nutrition services and overall patient care. From the Al-Islam and Muhammadiyah perspective, the study emphasizes the importance of consuming food and beverages in moderation, as commanded by Allah SWT, to maintain nutritional balance and prevent diseases related to overnutrition, such as obesity.

METHOD

This study employed a descriptive-analytic method with a cross-sectional approach, aiming to provide comprehensive information about the factors influencing inpatient satisfaction with nutrition services. The use of this method allows researchers to observe and analyze various factors simultaneously at a single point in time, providing a clear picture of how demographic and service-related variables interact in shaping patient satisfaction levels. The descriptive-analytic design is particularly appropriate for identifying correlations and describing phenomena without manipulating variables.

The research was conducted at RSKIA Sawojajar Bogor, located at Jl. Sawojajar No. 25, Bogor. The data collection period took place from September 2024 until completion. The location was chosen due to its active inpatient nutrition service unit and the diversity of its patients, which supports the representativeness of the findings. This hospital also provides a structured nutritional care system, making it an ideal setting for studying the quality and satisfaction of nutrition services among inpatients.

The population of this study consisted of all inpatients receiving nutrition services from the nutrition unit at RSKIA Sawojajar Bogor. The sample was determined using specific inclusion criteria: (1) patients aged over 18 years, (2) inpatients from class 1, 2, or 3 who received regular or soft food from the hospital's nutrition unit, and (3) patients who were able to communicate effectively. Based on these inclusion criteria, a purposive sampling technique was used, resulting in a total of 66 individuals per group, multiplied by two proportions to achieve 132 respondents. This sample size ensures adequate representation and statistical validity in the analysis.

Data collection was conducted using a structured questionnaire containing a series of questions and response options for inpatients at RSKIA Sawojajar Bogor. Respondents provided personal answers related to their experience with the hospital's nutrition services. The questionnaire employed a Likert scale with four response options, ranging from 1 (strongly

disagree) to 4 (strongly agree). For unfavorable items, the scale was reversed, where 1 represented "strongly agree" and 4 represented "strongly disagree." This measurement approach allowed for a more nuanced assessment of patient satisfaction levels across multiple dimensions.

The data processing procedure involved several systematic steps. The first step, editing, entailed checking each completed questionnaire to ensure all items were properly filled out. If any responses were incomplete, the researcher followed up to complete the data. Next, the coding process was performed by converting textual or categorical data into numerical form to facilitate easier entry and analysis. This transformation ensured consistency and accuracy in data handling during statistical processing.

Subsequently, the processing phase involved entering the coded data into the SPSS software, where all variables were organized and prepared for statistical analysis. The final stage, cleaning, was conducted to identify and correct missing values or errors before analysis. This process ensured the reliability and accuracy of the dataset, enabling the researcher to perform valid statistical tests and interpret the results with confidence. Together, these stages ensured that the data collected accurately reflected inpatient satisfaction with nutrition services at RSKIA Sawojajar Bogor.

RESULTS AND DISCUSSION

Respondent Characteristics

This study involved 132 inpatient respondents at RSKIA Sawojajar Bogor. The characteristics of the respondents were analyzed based on six categories: age, occupation, education level, class of care, length of stay, and perception of hospital food service, as presented in Table 1.

Table 1. Distribution of Respondent Characteristics (N=132)

Characteristic	Category	Frequency (n)	Percentage (%)
Age	>60 years	20	15.2
	18-40 years	26	19.7
	41-60 years	86	65.2
Occupation	Civil Servant	27	20.5
	Unemployed	15	11.4
	Private/Entrepreneur	90	68.2
Education	Elementary	9	6.8
	Junior High	17	12.9
	Senior High	76	57.6
	College	30	22.7
Class of Care	Class I	30	22.7
	Class II	63	47.7
	Class III	39	29.5
Length of Stay	<3 days	49	37.1
	≥3 days	83	62.9
Perception of Food	Good	76	57.6
	Not Good	56	42.4
Satisfaction Level	Satisfied	66	50.0
	Not Satisfied	66	50.0

Source: Primary Data, 2024

In terms of age, the majority of respondents were in the 41-60-year age group (65.2%), followed by those aged 18-40 years (19.7%) and those over 60 years (15.2%). This distribution reflects the typical demographic profile of maternal and child health hospital patients, where middle-aged individuals (often accompanying family members or receiving maternal care) constitute the largest group. Based on occupation, most respondents worked as entrepreneurs or private employees (68.2%), followed by civil servants (20.5%) and unemployed individuals (11.4%). This occupational distribution is consistent with the socioeconomic profile of Bogor region where private sector employment predominates.

Regarding education level, the majority were high school graduates (57.6%), followed by university graduates (22.7%), junior high school graduates (12.9%), and elementary school graduates (6.8%). The relatively high proportion of high school and university graduates suggests that the respondent population has moderate to good health literacy, which may influence their expectations and critical assessment of nutrition services. In terms of class of care, most respondents were treated in Class II (47.7%), followed by Class III (29.5%) and Class I (22.7%). This distribution reflects the typical patient mix in Indonesian public hospitals where middle-class patients (Class II) form the largest group, accessing affordable yet quality healthcare services.

Concerning the length of stay, 62.9% of respondents were hospitalized for three days or more, while 37.1% stayed for less than three days. The higher proportion of longer-stay patients provides an advantage for this study as these patients have more extensive exposure to nutrition services, enabling more comprehensive evaluation. As for perceptions of hospital food service, 57.6% of patients rated the food as "good," while 42.4% considered it "not good." This distribution indicates room for improvement, as a substantial proportion of patients expressed negative perceptions that could impact overall satisfaction and recovery outcomes.

Questionnaire Item Description

The research instrument consisted of two main variables measured using a 4-point Likert scale: patients' perceptions of hospital food service (20 items) and patient satisfaction with nutritional services (16 items). Each item was rated on a scale from 1 (strongly disagree) to 4 (strongly agree). Table 2 presents the descriptive statistics for key questionnaire items.

Table 2. Distribution of Responses for Selected Perception and Satisfaction Items

Variable	Item	Score 1 (%)	Score 2 (%)	Score 3 (%)	Score 4 (%)	Mean	SD
Perception	Food taste acceptable	3.0	12.1	33.3	51.5	3.33	0.78
	Food temperature appropriate	7.6	20.5	31.8	40.2	3.05	0.96
	Food presentation attractive	4.5	15.9	29.5	50.0	3.25	0.89
	Portion size adequate	3.8	11.4	35.6	49.2	3.30	0.81
	Menu variety sufficient	9.1	25.8	31.1	34.1	2.90	0.98
Satisfaction	Overall satisfied with food	6.1	18.9	25.8	49.2	3.18	0.95
	Staff responsive to complaints	4.5	14.4	27.3	53.8	3.30	0.87

Variable	Item	Score 1 (%)	Score 2 (%)	Score 3 (%)	Score 4 (%)	Mean	SD
	Would recommend nutrition service	8.3	19.7	31.8	40.2	3.04	0.97

Source: Primary Data, 2024

Overall, respondents' answers reflected a predominantly positive evaluation of both variables. Regarding perceptions of hospital food, most items received favorable ratings—for example, food taste acceptability achieved the highest mean score (M=3.33, SD=0.78), with 51.5% of respondents strongly agreeing and 33.3% agreeing that the food taste was acceptable. Similarly, food presentation attractiveness showed high approval levels, with 50.0% of respondents strongly agreeing. However, menu variety received notably lower ratings (M=2.90, SD=0.98), with 9.1% strongly disagreeing and 25.8% disagreeing, suggesting that repetitive menus represent a significant area for improvement. Food temperature appropriateness also showed room for improvement, as 28.1% of respondents expressed dissatisfaction (scores 1-2).

In terms of patient satisfaction, responses were also largely positive; staff responsiveness to complaints received the highest satisfaction rating (M=3.30, SD=0.87), with 53.8% of respondents strongly agreeing. Overall satisfaction with food achieved a mean of 3.18 (SD=0.95), indicating generally positive but not exceptional satisfaction levels. Willingness to recommend the nutrition service showed the most balanced distribution (M=3.04, SD=0.97), with 28.0% expressing reluctance (scores 1-2), 31.8% neutral-positive (score 3), and 40.2% highly willing (score 4), reflecting diverse patient views on overall service quality. These descriptive findings indicate that while the nutrition service performs adequately in many dimensions, specific aspects such as menu variety, food temperature, and consistency require targeted interventions to enhance overall patient satisfaction.

Bivariate Test (Chi-Square)

To find out the relationship between each respondent's characteristics and the level of patient satisfaction, the Chi-Square test was performed. This test is used because all variables analyzed are categorical. The results of this test aimed to identify whether there was a difference in the distribution of patient satisfaction (satisfied/dissatisfied) based on characteristics such as age, occupation, education, treatment class, length of treatment, and perception of food offerings. The results of the Chi-Square test on the age variable showed a significant association with patient satisfaction (p = 0.014). Table 4.10 shows that patients with the age of >60 years are mostly satisfied, while the 18–40 year age group shows a higher proportion of dissatisfaction.

Table 3. Bivariate: The Relationship of Respondent Characteristics to Patient Satisfaction

Variable	Category	Satisfied	%	Dissatisfied	%	Chi-Square	df	p-value
Age	>60 years old	16	12,1	4	3,03	8.560	2	0.014
	18–40 years old	11	8,3	15	11,3			
	41–60 years old	39	29,5	47	35,6			
	PNS	19	14,4	8	6,1			

Variable	Category	Satisfied	%	Dissatisfied	%	Chi-Square	df	p-value
Work	Not Working	1	0,8	14	10,6	15.793	2	0.001
	Private/Entrepreneurial Is	46	34,8	44	33,3			
Education	SD	1	0,8	8	6,1			
	SLTP	4	0,9	13	9,8			
	High School	43	32,6	33	25	12.725	3	0.005
	College	18	13,6	12	9,1			
	Higher Education							
Class Therapy	Class I	20	15,1	10	7,6			
	Class II	33	25	30	22,7	7.810	2	0.020
	Class III	13	9,8	26	19,7			
Old Hospitalization	< 3 days	21	15,9	28	21,2			
	> 3 days	45	34,1	38	28,8	1,590	1	0.207
Perception Sajian Food	Good	56	42,4	20	15,1			
	Not Good	10	7,6	46	34,8	40,195	1	0.001

Source : Research Data Processing, 2025

Well, here is the writing of Subchapter 5.4 Multivariate Test (Logistic Regression) which is arranged narratively, thoroughly, and interspersed with a table of test results according to the output you attached:

1. Multivariate Test (Logistic Regression)

The multivariate test in this study was carried out using binary logistic regression analysis. The aim was to determine the simultaneous influence of independent variables consisting of age, occupation, education, class of treatment, length of treatment, and perception of food intake on inpatient satisfaction. Patient satisfaction as a dependent variable is binary-coded: 1 for "satisfied" and 0 for "dissatisfied".

2. Model Eligibility

Before interpreting the influence of independent variables, model feasibility testing was carried out using the Omnibus Test of Model Coefficients and the Hosmer and Lemeshow Test. The results of the omnibus test showed that the regression model was simultaneously significant to the dependent variable ($p < 0.001$), which means that the set of independent variables included was able to predict patient satisfaction

Tabel 4. Omnibus Test of Model Coefficients

Step	Chi-Square	df	Sig.
Step 1	124.353	11	<.001

Source : Research Data Processing, 2025

Meanwhile, the Hosmer and Lemeshow test yielded a significance value of 0.874 ($p > 0.05$), which suggests that the regression model is consistent with the data and is statistically acceptable.

Tabel 5. Hosmer and Lemeshow Goodness of Fit Test

Chi-Square	df	Sig.
3.812	8	0.874

Source: Primary Data, 2024

3. Model Prediction Capabilities

The predictability of the model is measured through the Classification Table. The results showed that the model was able to classify the data with an accuracy rate of 87.9%, which means that the model was quite good at predicting patient satisfaction based on the variables entered.

Tabel 6. Classification Table

Predictions	Dissatisfied	Puas	Accuracy (%)
Not satisfied (0)	59	7	89.4%
Puas (1)	9	57	86.4%
Total			87.9%

Source : Research Data Processing, 2025

4. Interpretation of Regression Coefficients

The results of the logistic regression analysis showed that almost all independent variables had a significant effect on patient satisfaction ($p < 0.05$). The interpretation of the logistic regression coefficient is shown in Table 5.19 as follows.

Table 7. Logistic Regression Results of Patient Satisfaction Variables

Ages 41–60 vs >60	-5.241	0.002	0.005	0.000 – 0.144
Jobs Not Working	-6.267	0.001	0.002	0.000 – 0.068
Private/Self-Employed.	-2.768	0.012	0.063	0.007 – 0.543
Elementary Education	-10.009	0.001	0.000	0.000 – 0.070
High School Education	-3.362	0.004	0.035	0.003 – 0.344
Junior High School Education	-7.207	0..001	0.001	0.000 – 0.042
Class II vs Class I	-4.879	0.001	0.008	0.000 – 0.131
Class III vs Class I	-6.815	0.001	0.001	0.000 – 0.039
Long Treatment ≥3 days	2.395	0.009	10.965	1.799 – 66.837
Lack of Perception	**-7.548**	**0.001**	**0.001**	**0.000 – 0.015**
Konstanta	17.170	<,001	—	—

Source : Research Data Processing, 2025

From the table above, it can be seen that:

1. Respondents aged 18–40 and 41–60 years had a much lower likelihood of satisfaction than the >60-year-old age group.
2. Patients who do not work or those who work in the private sector tend to be more dissatisfied than civil servants.
3. Primary and secondary education were associated with lower levels of satisfaction compared to those with higher education.
4. Patients in treatment classes II and III have a much higher risk of dissatisfaction than patients in class I.
5. Perception of food serving had the strongest effect: patients who rated food serving poorly had a very low chance of satisfaction (Exp(B) = 0.001).
   Interestingly, the variable length of treatment showed a positive direction: patients treated ≥3 days tended to be more satisfied (p = 0.009; Exp(B) = 10.965)

6. Multivariate Conclusion

Overall, the logistics regression model shows that perceptions of food offerings, treatment classes, and educational backgrounds are the most dominant factors that affect patient satisfaction. These results reinforce the importance of non-medical services such as food quality and comfort during treatment, in addition to the sociodemographic characteristics of patients. This subchapter discusses in depth the relationship between independent variables (age, occupation, education, treatment class, length of treatment, and perception of food offerings) and the bound variable, namely patient satisfaction. The discussion is based on the results of statistical tests that have been carried out, both Chi-Square tests (bivariate) and logistic regression (multivariate), and are supported by the latest scientific references.

7. Effect of Age on Patient Satisfaction

The results of the Chi-Square test showed that there was a significant relationship between age and patient satisfaction (p = 0.014). In the logistic regression test, the effect of age remained significant (p = 0.002), in which patients aged 18–40 years and 41–60 years had a much lower likelihood of feeling satisfied compared to patients aged >60 years. This is reflected in the very small Exp(B) value, which is 0.000 for 18–40 years old and 0.005 for 41–60 years old. These results show that younger patients tend to have higher expectations and are more critical of food service, as explained by Ng et al. (2010) that the younger generation has characteristics of demanding service quality, including in the context of hospitals.

8. The Effect of Work on Patient Satisfaction

Work was also shown to have a significant effect on patient satisfaction, both in the Chi-Square test (p < 0.001) and logistic regression (p = 0.002). Patients who do not work or work in the private/self-employed sector have a lower likelihood of feeling satisfied compared to patients with civil servant status. This is reflected in the Exp(B) values of 0.002 (not working) and 0.063 (private). This difference can be attributed to socioeconomic background and perception of service quality. According to Seemiller and Grace (2016), work is related to the level of confidence and expectation of public services, including hospital meals.

9. The Effect of Education on Patient Satisfaction

Education is a very decisive factor in shaping the perception and satisfaction of food service. In this study, education was shown to have a significant effect (Chi-Square p = 0.005;

logistic regression p = 0.001). Patients with elementary, junior high, and high school education levels have a much lower likelihood of being satisfied than patients with a college background. For example, the Exp(B) value for junior high school educated patients is only 0.001. These results suggest that patients with low education may have difficulty understanding nutritional information or unrealistic expectations of hospital food offerings (Twenge, 2017).

10. Effect of Treatment Class on Patient Satisfaction

The treatment class also showed a significant influence on patient satisfaction (Chi-Square p = 0.020; logistic regression p < 0.001). Patients in Class II and Class III have a lower likelihood of satisfaction compared to Class I patients. This is evidenced by the Exp(B) value of 0.008 for Class II and 0.001 for Class III. Deterioration in the quality of facilities, including food delivery, often occurs in lower classes of care, thus impacting patient perception and satisfaction. A study by Widyastuti et al. (2020) stated that differences in service classes in hospitals often create a perception gap, which affects the level of patient satisfaction with food services.

11. Effect of Length of Treatment on Patient Satisfaction

Although not significant in the Chi-Square test (p = 0.207), the length of treatment variable showed a significant influence on logistic regression (p = 0.009). Patients who were treated ≥3 days had a 10.97 times greater chance of feeling satisfied than patients who were treated <3 days (Exp(B) = 10,965). These results indicate that the longer patients are treated, the more likely they are to adjust or get food service improvements. Caines et al. (2022) explain that long-term patients tend to be more adaptive to the menu and atmosphere of the hospital, so satisfaction tends to increase.

12. The Effect of Perception of Food Serving on Patient Satisfaction

The perception variable of food serving was the most significant variable in this study, both bivariate (Chi-Square p < 0.001) and multivariate (p < 0.001). Patients with a negative perception of food serve have a very low likelihood of satisfaction, as indicated by the value of Exp(B) = 0.001. This means that if the patient considers the food to be not good, then the chances of feeling satisfied are almost zero. This suggests that subjective perceptions of taste, temperature, cleanliness, and menu variety greatly determine the overall assessment of food service. Indriasari and Sulistyowati (2019) also found that perception of food is a key indicator in the formation of patient satisfaction.

13. Overall Logistic Regression Model

The logistic regression model in this study was shown to be significant simultaneously (Omnibus Test: p < 0.001), with a Cox & Snell R^2 value of 0.610 and a Nagelkerke R^2 of 0.814. This indicates that the variables of age, occupation, education, treatment class, length of treatment, and perception of food served together were able to explain 81.4% of the variation in patient satisfaction. The Hosmer and Lemeshow test yielded p = 0.874, indicating that the model had an excellent goodness-of-fit. The model was also able to correctly classify 87.9% of cases, reinforcing the model's validity in predicting patient satisfaction levels.

Discussion

Based on the results of statistical analysis, this study shows that there is a significant relationship between age, occupation, education, treatment class, and patient perception of food

serving and the level of satisfaction of inpatients with nutritional services at RSKIA Sawojajar Bogor.

1. The Influence of Age on Satisfaction

The results showed that elderly patients (>60 years) tended to be more satisfied with nutritional services than younger age groups. The results showed that the elderly age group (>60 years) tended to have a higher level of satisfaction with nutrition services than the productive age group (18–40 years) and the middle age group (41–60 years). This can be explained through two approaches:

- Psychosocial, where the elderly generally have lower expectations of non-medical services such as food, compared to the younger generation who are more critical and vocal about the quality of services.
- Cognitive, i.e. the ability to adapt to higher situations in the elderly, especially when compared to the younger generation who are more exposed to modern consumptive and culinary cultures.

This study reinforces the findings of Aminuddin et al. (2018), which showed that elderly patients are more likely to feel satisfied because they tend not to have high demands on the diversity of taste and appearance of food. They focus more on the basic needs and functional value of food as part of treatment

2. The Role of Work and Education

The patient's employment status and education level also play an important role in shaping perceptions and expectations of nutrition services. The results of this study show that patients who do not work and have a low level of education (SD-SLTP) are more satisfied with hospital nutrition services. This is consistent with the research of Pibriyanti et al. (2024), which explains that the higher a person's level of education, the higher the critical ability and expectations for the services received. Patients with higher education tend to compare the services received to ideal standards or previous experience, both in other hospitals and online information. Likewise with employment status. Patients with formal work backgrounds (civil servants, private) tend to have higher expectations of service, especially regarding menu variety, presentation aesthetics, and officer professionalism. In contrast, patients who are not working may be more focused on healing and feel grateful for the services available without much demand.

3. Treatment Class as a Determinant Factor

Another important finding was that patients from treatment class I showed higher levels of satisfaction compared to classes II and III. Although in principle hospitals provide food of the same quality and portions for each class, there are differences in non-food aspects that can affect patient perception. Treatment room facilities, environmental cleanliness, and interaction with officers are more personal in the class I treatment room, which indirectly forms the overall impression of patients on the quality of service—including food service. This is in line with the concept of the halo effect in the psychology of perception, where the positive qualities of one aspect (e.g. the comfort of space) influence the judgment of another aspect (such as the quality of food). Although there was no formal discriminatory treatment between classes, these results signal that perceptions of nutrition services are influenced by physical and psychological context during the hospitalization process.

4. Insignificant Treatment Time

In contrast to initial expectations, the length of the treatment day did not have a significant relationship with patient satisfaction levels. This can be explained that the quality of food served is more impactful than the duration of the patient's exposure to the service. Contrary to initial assumptions, the variable length of treatment days did not have a significant relationship with patient satisfaction in this study. In some literature, the duration of a stay has the potential to increase or decrease satisfaction, depending on the quality of interactions and services received during the stay. However, in this case, duration is not the main determinant. This is most likely due to two factors:

1. Patients make service assessments based on quality, not time quantity.
2. The variation in service quality per day is quite consistent, so that patients who are treated for longer do not experience a noticeable difference in nutritional services compared to patients who are treated for a shorter time.

These findings are in line with the research of Yenni et al. (2024), which states that patients' nutritional intake and perception of food serve determine the level of satisfaction rather than the length of time patients are exposed to these services.

5. Perception of Food Serving Plays a Central Role

The variable perception of food served was proven to be the most significant and dominant factor influencing patient satisfaction levels, based on the highest Exp(B) value in the logistic regression model.

Components in this perception include:

a) Food taste
b) Aesthetics of presentation (color, order, warmth)
c) Cutlery hygiene
d) Variety and saturation of the menu
e) Compatibility with the patient's therapeutic diet

This reinforces the view of Rosario & Walton (2020) and Muniz et al. (2023), who emphasize that the sensory dimension of food and the appearance of presentation greatly influence patient satisfaction levels. Even foods with high nutritional content can be judged bad if they are not visually appealing or taste bland. Thus, the perception of food is not only a medical issue (nutrition and diet), but also the emotional and psychological experience of the patient, which greatly affects the comfort and adherence to treatment.

6. Managerial Implications and Strategic Recommendations

The results of this study have important implications for hospital management, especially in the management of nutrition service units. Some practical recommendations that can be implemented include:

a) Periodic training for nutrition officers related to interpersonal communication, service ethics, and responsiveness to patient complaints.
b) Periodic evaluation of the food menu, both in terms of nutritional value, taste, and variety. The menu should be designed by a multidisciplinary team consisting of nutritionists, hospital chefs, and patient representatives.
c) Increased patient participation in food menu selection through the pre-order system or food preference form, especially for patients hospitalized for more than 3 days.

d) Regular monitoring and survey of patient satisfaction based on standard questionnaires such as ACHFPSQ as a basis for continuous improvement.
e) Serving innovations such as the use of garnish, serving in closed bowls/bowls, and the use of clean and ergonomic serving utensils.

By implementing this policy, it will not only increase patient satisfaction, but will also accelerate the healing process through increasing food intake, as well as strengthening the image of the hospital as an institution with excellent service quality.

CONCLUSION

The study found that several factors significantly influenced inpatient satisfaction with nutrition services. Patient age ($p = 0.014$), employment status ($p < 0.001$), education level ($p = 0.005$), and class of care ($p = 0.020$) each showed strong relationships with satisfaction in both chi-square and logistic regression analyses, indicating that older, more educated, and professionally active patients, as well as those in higher care classes, tended to report higher satisfaction. Although the length of treatment was not significant in the chi-square test ($p = 0.207$), it showed a limited but meaningful effect in the regression model ($p = 0.009$). Perception of food serving was the most influential variable, demonstrating a very strong relationship with satisfaction ($p < 0.001$; $Exp(B) = 0.001$). Collectively, all independent variables significantly affected satisfaction levels (omnibus $p < 0.001$), with the model explaining 81.4% of the variation (Nagelkerke $R^2 = 0.814$). Future research should explore psychological, cultural, and service process factors that may further clarify how patient experiences and expectations shape satisfaction with hospital nutrition services.

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