HOSPITAL FOOD SERVICE ASSESSMENT IMPROVING NUTRITIONAL INTAKE INPATIENTS: A LITERATURE REVIEW

Ria Qadariah Arief[1]*, Linda Prasetyaning Widayanti[2], Sri Hidayati L[2], Sarita Oktorina[1], Maryam Jamila Arief[3], Syamsul Alam[4]

[1]Department of Nutrition, Faculty of Psychology and Health, Universitas Islam Negeri Sunan Ampel, Surabaya, Indonesia
[2]Department of Psychology, Faculty of Psychology and Health, Universitas Islam Negeri Sunan Ampel, Surabaya, Indonesia
[3]Department of Pharmacology, Faculty of Pharmacy, Universitas Mulawarman, Samarinda, Indonesia
[4]Department of Public Health, Faculty of Medical and Health, Universitas Islam Negeri Alauddin, Makassar, Indonesia

ABSTRACT

Background: *Malnutrition in hospitals is a commonly occurring and often overlooked issue that impacts not only the clinical outcomes of patients, such as their length of stay, morbidity, mortality, and quality of life, but also the overall sustainability of the healthcare system. column format.*
Aims: *The purpose of writing this systematic literature review is to collect scientific evidence regarding food service satisfaction assessment techniques for inpatients in hospitals.*
Method: *This research conducting a literature review using PRISMA guidelines, using data based on Google Scholar and Scopus which examined the level of patient satisfaction with food services in hospitals.*
Result: *From the six papers that we analyzed, we obtained an assessment process for the level of patient satisfaction using caloric intake calculations, and some used validated questionnaires, and obtained several appropriate strategies to increase the nutritional intake of inpatients. Conclusions: Assessing the patient's nutritional and nutritional intake is very important in determining the patient's health and recovery.*

INTRODUCTION

The situation of decreased nutritional status in patients is something that often occurs because of hospitalization (Barker et al., 2011). (Barker et al., 2011). This situation is related to satisfaction with food service at the hospital, which is important because the poor nutritional condition of inpatients at the hospital is a health problem that often occurs providing food that does not meet the nutritional needs of patients while in hospital can cause a decrease in nutritional status and

harm patient recovery (Beavan et al., 2019). Therefore, ensuring food quality and patient satisfaction with food service is crucial.

Previous studies have shown that patient satisfaction with hospital food services is related to adequate food consumption and impacts patient nutritional status (Blondal et al., 2022; Ferreira et al., 2021). In addition, patients who are satisfied with food services at the hospital also tend to have a better level of adherence to the care and treatment provided (Osman et al., 2021). Therefore, increasing patient satisfaction with food service can positively impact patient recovery and treatment success.

However, some obstacles still exist to ensuring patient satisfaction with hospital food services. Several factors, such as limited menu variety (Dahka et al., 2022), lack of flexibility in meeting patient dietary needs(Fink et al., 2022) , and lack of training for food service staff (Alqurashi et al., 2019), can affect the quality of food service and patient satisfaction(Sathiaraj et al., 2019). Therefore, it is necessary to research strategies and techniques for assessing satisfaction with food services that can improve service quality and patient satisfaction.

In public health, maintaining health and accelerating patient recovery are very important. Therefore, ensuring the quality of food service in hospitals is crucial in increasing patient satisfaction and faster patient recovery(Ferreira et al., 2021). Research on satisfaction assessment of food service in hospitals is the first step in improving the quality of food services and helping to ensure that patients receive food according to their nutritional needs.

The purpose of writing this systematic literature review is to collect scientific evidence regarding food service satisfaction assessment techniques for inpatients at the hospital. This systematic literature review aims to collect and analyze existing scientific evidence regarding food service satisfaction assessment techniques for inpatients at the hospital. This study will focus on finding answers to several important questions, such as whether food service satisfaction assessment techniques effectively increase patient satisfaction and positively impact clinical outcomes and patient recovery.

METHODS

This study uses the Systematic Literature Review method, which follows the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) protocol (Haddaway et al., 2022). In developing this literature review, we use several techniques, including inclusive and exclusive criteria. We also screened data from the Google Scholar and Scopus data-based search engines and manually analyzed the papers we had previously selected.

Table 1 Inclusion and Exclusion Criteria berdasarkan PICOS kriteria

Criteria	Definition
Participants	Hospital Inpatients
Intervention/Assessment	All types of assessments are carried out
Comparator	All Comparators
Outcomes	Type of Assessment in measuring food service satisfaction in hospitals
Study Design	All Types of Research study

The exclusion criteria for the papers we analyzed were papers in the form of nutritional guidelines, reviews, comments, editorials, or meeting abstracts.

Data Sources and search strategies

Our data search process used Google Scholar and Scopus sources with Publish or Perish then screened the paper according to some of the keywords we entered, including "Inpatient Satisfaction," "Inpatient Satisfaction Assessment," and "Assessment of Increasing Nutrition Intake "inpatients." Our article research search data provides a publication year limit from 2018 – 2023 to get an overview of the latest trends regarding the keywords we used.

Analysis, Data Extraction, dan Reporting

All articles from the Mendeley application are screened, starting from the Title and Abstract, to assess the paper's eligibility according to the inclusion criteria. Identical papers are deleted. Two analysts carried out the paper selection process by reading the title and abstract of our team. All paper titles and abstracts that have been read and do not meet our analysis requirements are removed. During the publishing process, some papers were resolved by discussion d After

full-text analysis. The following information was extracted from the included articles: title, first author of the publication, year of publication, country, study design, sample size, type of patient, study setting, type of intervention, assessment time, endpoint method of assessment, and results of each study.

RESULTS

The results of this study describe the overall information obtained during the research process which can be arranged based on the variables / research objectives plus the information that the researcher finds during the study. The results of the study contain the narrative of the contents of the row table or the picture of the research results accompanied by a table number or picture as information. The maximum number of tables and or pictures is 5.

Our research obtained 17,250 articles as the initial database to analyze hospital patient satisfaction with food service. From this database, we found six papers that match the inclusion matrix and fit our expected analysis needs. We describe the process of paper assistance in the following PRISMA diagram
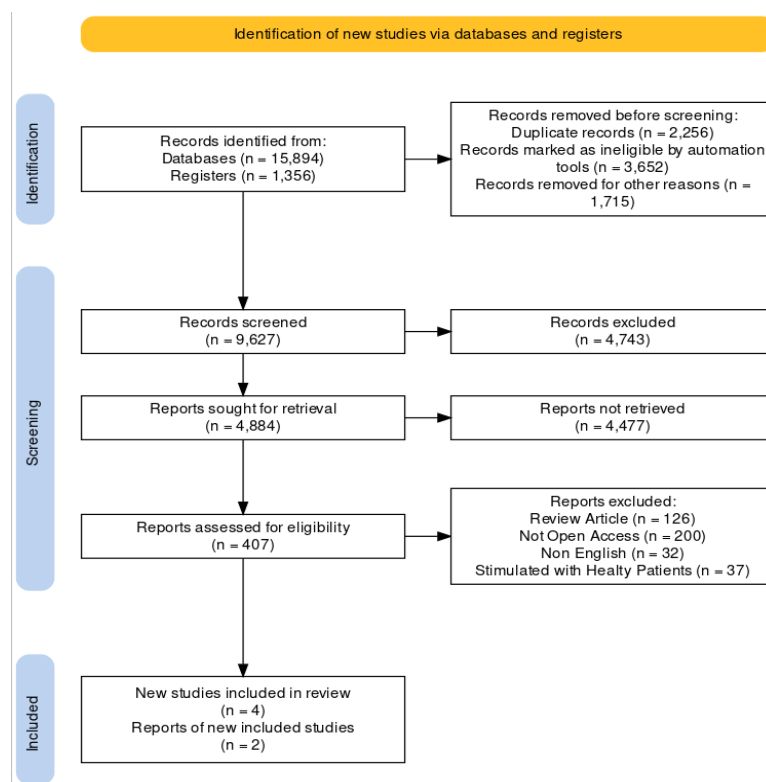
Figure 1. PRISMA Diagram

The PRISMA diagram below shows the screening process that we carried out. Hence, we selected six articles that we would display based on an analysis of patient satisfaction with food service.

Table 2. Analysis of Patient Satisfaction with Food Service at the Hospital.

First Author, Year of Publication, Country	Study Design	Sample Size	Patient Type	Methods of Assessment	Result	Ref.
S Beaven, 2019, UK	Crosse stional	n = 111	Mall Nutrition inpatients	Malnutrition The Universal Screening Tool (MUST) scores classified patients as either nutritionally well (MUST 0) or nutritionally vulnerable (MUST 1). Individual energy and protein	The Digest standards for energy and protein were met by 35% and 63% of patients, respectively. Nutritionally healthy patients were more likely to meet protein nutrient standards (62%) than estimated individual	(Beavan et al., 2019)

				needs were calculated using weighted equations. Nutritional intakes were measured using a 24-hour dietary recall and compared to the British Dietetic Association's Nutrition and Hydration Digest standards and estimated individual needs.	requirements (30%) (P 0.001). Nutritionally vulnerable patients were more likely to meet estimated individual energy requirements (60%) than Digest standards (30%). (P = 0.047)	
Zehra MC, 2019, Turkey	Crosse stional	n = 90	Inpatient s Aged >65 years	Foodservice ratings and 24-hour food recalls were collected through face-to-face interviews.	Male patients with more than seven days longer did not find food portions satisfactory (p<0.05). According to food consumption records, 78.9% of patients had sufficient energy and protein intake. In comparison, 94.4% of patients consumed more salt, and 63.3% consumed higher dietary fat than recommended.	(Zehra Margot Celik, 2019)
Janne Beelen, 2018, Netherla nds	Experi ment	n = 147	Inpatient s > 65 years	The intervention and control groups got the same menu with a different protein addition menu. What is calculated is the amount and consumption of protein in each group.	The intervention products provided 30% of the total protein in the intervention group. The intervention group consumed 105.7 ± 34.2 g protein compared to 88.2 ± 24.4 g in the control group (p < 0.01), corresponding with 1.5 vs 1.2 g/kg/d (p < 0.01). More patients in the intervention group than in the control group reached a protein intake of 1.2	(Beelen et al., 2018)

					g/kg/d (79.1% vs 47.5%). Protein intake was significantly higher in the intervention group at breakfast, during the morning between breakfast and lunch, and at dinner.	
Nuryani, 2020, Indonesia	Deskriptif	n = 110	Inpatients in First and VIP class	Assessing patient satisfaction by measuring directional questionnaires, including food service satisfaction, includes tangibles, reliability, responsiveness, assurance, and empathy.	The measurement of satisfaction from the tangible response aspect was very satisfactory, namely 74.3%, and only 25.7% were satisfied. Regarding reliability, 40.9% were satisfied, and 7.3% were dissatisfied. Regarding responsiveness, 58.6% were unsatisfied and very satisfied, and 7.3% were. Regarding variable assurance, 50.8% were satisfied, and 49.2% were very satisfied. Aspects of variable empathy less satisfied 49.1% and very satisfied 14.5%.	(Nuryani et al., 2020)
Esther Sathiaraj, 2018, India	Crossetional	n = 160	Inpatients	Dietary intake observation tool to compare the traditional and patient-centered food service models that utilized a five-point visual scale. This tool helped to measure the amount of food intake among patients. A patient satisfaction survey was also administered to	A significant weight gain and increase in energy and protein intake (P < 0.01) in the patient-centred food service model. Higher patient satisfaction ratings indicated improvement in food service across domains in quality and flavour, timeliness of delivery, diet	(Sathiaraj et al., 2019)

				measure patient satisfaction with both models. The survey measured factors such as food quality, variety, and overall satisfaction with the meal service.	education and overall satisfaction.	
Daniela Abigail, 2019, Israel	Experiment	n = 131	Inpatients	The assessment was carried out by using a validated questionnaire to measure satisfaction with hospital food services while also using medical record data to obtain an overview of patient satisfaction in hospitalization.	From inpatients, the orange napkin group (n = 66) consumed 17.6% more food provided by the hospital than the white napkin group (control) (n = 65). the increase was because the dishes served contained carbohydrates and vegetables. What is more. Furthermore, it gives higher satisfaction with hospital food service than the control group.	(Navarro et al., 2019)

From Table 2, we used all respondents in the study who were inpatients at the hospital. Several different assessments measure comparison of patient satisfaction; three papers explain consumer satisfaction from the number of calories consumed by patients originating from the hospital, using the 24-hour Food Recall method by classifying the patient's needs as malnourished or not with Malnutrition Universal Screening Tool scores (MUST).

DISCUSSION

Assessing nutritional intake and patient satisfaction at the hospital is very important to

Moreover, three articles discuss patient satisfaction with previously validated questionnaires. Four articles we analyzed used cross-sectional research. The others used experimental and descriptive approaches. From these six papers, we get some descriptions of strategies to increase nutritional intake in inpatients to improve the nutritional status of patients while undergoing therapy at the hospital.

maintain patient health and assist in their recovery process. Patients who receive proper and adequate nutritional intake will have a

stronger immune system and the ability to recover more quickly from their illness. Therefore, it is important for hospitals to regularly monitor and evaluate patients' nutritional intake and ensure that patients receive foods that meet their nutritional needs (Takagi et al., 2020).

In addition, patient satisfaction is also an important factor in their healing process. Patients who feel comfortable and happy with the care they receive in the hospital tend to have lower stress levels and can focus on their recovery. Therefore, assessing patient satisfaction is important to determine what hospitals can do to improve service quality and provide better care. By evaluating and improving patient nutrition and satisfaction, hospitals can improve the quality of care and help patients recover more quickly.

Malnutrition The Universal Screening Tool (MUST)

The Malnutrition Universal Screening Tool (MUST) is a screening tool used to evaluate the risk of malnutrition in patients. MUST consists of three components: measuring body mass index (BMI), assessing unwanted weight loss, and assessing the patient's dependence on medical care (Gomes-Neto et al., 2021).

Measuring Body Mass Index (BMI)

In the first component of MUST, doctors or other medical personnel measure the patient's BMI using the formula: body weight (kg) divided by the square of height (meters). Patients will be categorized as underweight, normal, overweight, or obese, depending on the BMI value obtained.

Assessment of unwanted weight loss

In the second component of MUST, the doctor or other medical professional asks if the patient has experienced unintentional weight loss in the past three months. Patients who answer "yes" will be given a score of 2 on this component.

Assessment of the patient's level of dependence on medical care.

In the third component of MUST, doctors or other medical personnel assess the patient's level of dependence on medical care, such as whether the patient needs assistance with eating or drinking or has a medical condition affecting their ability to consume food and drink. Patients categorized as highly dependent will be given a score of 2 on this component.

After all, components are calculated, the patient will be given a total score between 0 and 6. Patients with a total score of 0 will be categorized as having low malnutrition risk. In contrast, patients with a score of 1 or 2 are categorized as moderate risk and require further action, such as a nutritional evaluation and appropriate meal plan. Patients with a score of 3 or more are categorized as high-risk and require more intensive nutritional interventions.

MUST be used quickly and easily by doctors or other medical personnel. It can help identify patients at risk of experiencing

malnutrition so that early and timely intervention can be carried out.

Foodservice Ratings and 24-hour Food Recalls

Foodservice Ratings

In hospitals, food service ratings can be performed to evaluate the quality of food served by the hospital. An expert team of nutritionists, dietitians, and chefs can assess using certain standards, such as guidelines for a balanced diet or nutritional guidelines set by the government (Lau & Gregoire, 1998).

The expert team will observe and evaluate the food served in the hospital, including the type, amount, quality, and cleanliness. They will also consider other factors, such as the availability of a balanced menu of choices and environmental factors that affect the patient's appetite in the hospital.

Assessment of food service ratings can provide useful information to improve hospital food quality and patient health.

24-hour Food Recalls

24-hour food recalls can also be carried out in hospitals by interviewing patients or using a self-administered questionnaire. A team of nutritionists or medical personnel can collect data regarding the patient's food intake for the last 24 hours to estimate the nutritional adequacy the patient has obtained (Chin et al., 2019).

In conducting 24-hour food recalls, the team of experts will ask in detail about the type, amount, and method of serving of food consumed by the patient in the last 24 hours.

They will also consider other factors, such as disorders of the digestive system or health conditions of the patient that may affect food intake.

The data collected from 24-hour food recalls can be used to evaluate the adequacy of the patient's nutritional intake in the hospital and assist the medical team in planning the right diet.

The paper of this systematic literature review is expected to provide useful information for health practitioners and hospital managers to develop effective strategies to increase patient satisfaction with the food services provided.

It is also hoped that this study will encourage further research in this area so that better and more effective solutions can be found to improve patient satisfaction and clinical outcomes in the context of hospital food service.

Directional Questionnaires

Assessing patient satisfaction by measuring directional questionnaires, including food service satisfaction, involves using a questionnaire that assesses different aspects of patient satisfaction related to food service. The questionnaire typically includes questions related to tangibles, reliability, responsiveness, assurance, and empathy (Hajesmaeel-Gohari et al., 2022).

Tangibles refer to the physical aspects of food service, such as the cleanliness and appearance of the food service area and the quality of the food and beverage offerings.

Reliability refers to the consistency and dependability of food service, such as the accuracy of meal delivery and the timeliness of food preparation and delivery.

Responsiveness refers to the willingness of food service staff to provide prompt and courteous service and responsiveness to patient requests and needs. Assurance refers to the knowledge and competence of food service staff and the ability of staff to convey confidence and trust to patients.

Finally, empathy refers to the ability of food service staff to understand and respond to patients' emotional and personal needs, such as addressing dietary preferences or providing emotional support during mealtime.

A standardized questionnaire can be administered in paper or electronic form. The questionnaire typically consists of questions related to the different aspects of food service satisfaction, with response options ranging from strongly agree to disagree strongly.

Data collected from the questionnaire can be analyzed to identify areas of strength and areas for improvement in food service delivery.

The results can then be used to inform quality improvement initiatives to enhance the patient experience and improve patient outcomes in the hospital setting.

Assessment of the patient's nutritional and nutritional needs is an important benchmark in determining the patient's health and ensuring that nutritional needs are met. However, many aspects of this assessment still need to be improved and developed to provide more accurate and timely information for nutritionists and doctors in planning patient care and nutrition.

One of the main problems in assessing nutritional needs is the difficulty in accurately measuring a patient's food intake. Therefore, appropriate assessment tools must be developed to ensure that the information obtained is accurate and reliable.

Some techniques used to measure patient food intake are a food diary, 24-hour food recall, and a dietary intake observation tool. However, it is still necessary to develop and improve these techniques to provide more accurate and easy-to-use information.

On the other hand, a patient's nutritional assessment is also very important in determining proper nutritional needs and optimizing patient care. Some techniques used to assess a patient's nutritional status are the Malnutrition Universal Screening Tool (MUST), bioelectrical impedance analysis (BIA), and skinfold thickness measurement.

However, as with nutritional needs assessment, there is still a need to develop and improve these techniques to ensure that the information obtained is accurate and reliable.

CONCLUSION

Assessing the patient's nutritional and nutritional needs is very important in determining the patient's health and recovery. However, there are still many obstacles and challenges in carrying out this assessment, especially in measuring the patient's food

intake, which is often difficult to measure accurately.

Therefore, it is necessary to develop more precise and accurate assessment tools to overcome this problem. Several techniques such as food service ratings, 24-hour food recalls, dietary intake observation tools, Universal Malnutrition Screening Tool (MUST), bioelectrical impedance analysis (BIA), and skinfold thickness measurement have been developed to assist in assessing patient nutritional and nutritional needs.

SUGGESTION

Developing and improving more sophisticated and accurate assessment techniques, such as digital technology or applications, can assist in recording patient food intake. Moreover, improve the quality of food service and assess patient satisfaction. This can be done by conducting surveys or questionnaires that cover tangibles, reliability, responsiveness, assurance, and empathy.

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