

## Analysis Of Factors That Influence Leftovers In Hospital Patients At Second Hospital Dr. Soepraoen Malang

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### ABSTRACT

Leftovers are one simple indicator that can be used to evaluate the success of hospital nutrition services. The presence of food residues for hospitalized patients can be caused by internal factors and external factors. Internal factors include the appearance of food when served, the taste of food when eaten and a variety of menus. External factors include stress, appetite, type of illness, likes or dislikes, the presence of dietary restrictions and eating habits. The general objective of this study was to analyze the factors that influence the remaining food of patients in the inpatient room of the Second Hospital of dr. Soepraoen Malang. This study was an observational research that was descriptive analytic, the data collection was done by cross sectional method with instantaneous variable measurements with the help of instruments in the form of questionnaires and direct observation. The sampling technique uses purposive sampling technique. The independent variable is the taste of the menu which includes the appearance and taste of food, the dependent variable is leftovers. Data retrieval was carried out on 30 respondents, then all data were analyzed using statistical tests. Respondents who stated their appearance at Second Hospital dr. Soepraoen Malang with interesting categories as much as 80.0% and enough categories as much as 20.0%. Respondents stated that the taste of food with interesting categories was 46.6% and enough categories as much as 53.4%. The menu of rice and vegetables is left 50-75%, the menu of animal side dishes, vegetable dishes and fruit is left 25-50%. Linear regression test showed that there was an effect of appearance on leftovers ( $p = 0.032$ ), there was an effect of taste on leftovers ( $p = 0,000$ ) and there was an influence on appearance and taste on leftovers ( $p = 0,000$ ).

**Keywords :** appearance of food, taste of food, leftovers.

### INTRODUCTION

Food served for inpatients serves as one of the support efforts to cure disease, maintain tissue structure and bodily functions in the hope that it can speed up the healing process and shorten the treatment period. The hospital, especially the Nutrition Unit, has made every effort to present a menu that suits the needs of the patient by presenting a diverse menu that has been arranged so that the patient is able to finish his food.

Nutrition services in hospitals are services provided and adjusted to the patient's condition based on clinical condition, nutritional status, and metabolic status of the body. One effort to help the healing process in hospitals is done through medical support services such as nutrition services. To achieve these objectives, it is important to apply management in the operation of food so as to produce quality food and food hygiene that meets health requirements (Aritonang, 2009). Nutrition service activities in the inpatient room are a series of activities starting from the planning of the preparation of patient's diets to conducting an evaluation in the treatment room. The purpose of these nutrition service activities is to provide therapeutic diet that is appropriate to the patient's attitude change. Nutrition services for outpatients are done if the patient is still or is in need of certain dietary therapy. Outpatient nutrition services are also carried out through nutrition counseling at the nutrition polyclinic (Kemenkes RI, 2013).

The remaining food is still often found in various hospitals in Indonesia. Several studies conducted in hospitals (RS) in Indonesia show that the average food waste varies greatly between 17% -67%. Research at Hasan Sadikin Hospital in Bandung obtained 31.2% of the remaining soft foods while in Dr. Sardjito Yogyakarta found an average leftover breakfast of 23.41%. In Palu, food leftovers at Madani Psychiatric Hospital at lunch time are 24.48% rice. Based on preliminary surveys conducted by researchers, it is known that the average leftover food in the inpatient rooms of the Second Kindergarten Dr. Soepraoen Malang varies by 20% -30%.

Based on the Minister of Health Decree No.129 / Menkes / SK / II / 2008 on Hospital Minimum Service Standards (SPM), the remaining food that is not consumed by patients is 20% at most. Fulfillment of these requirements is an indicator of the success of nutrition services in every hospital in Indonesia. Based on several theories and from the results of previous studies, the occurrence of leftovers due to several factors derived from patients, food and the environment.

According to the Ministry of Health of the Republic of Indonesia (2013) that the success of a food organization is often associated with the remaining food consumed by patients. Food scraps indicate suboptimal feeding, so food scraps are a simple indicator that can be used to evaluate the success of hospital nutrition services. The large amount of leftovers causes the patient's nutritional needs to be inadequate and economically with the amount of leftovers will make more and more costs wasted. The reality in the field shows that even though a diet or diet has been prepared that is in accordance with the nutritional adequacy of the patient, there are still not enough leftover foods that cannot be consumed by the sufferer for various reasons. Patients often can not or do not want to spend the food served by the hospital because in general the condition of pain reduces appetite, in addition to psychological factors sufferers who feel less comfortable and are not accustomed to the hospital environment that is much different from the environment of daily life. In addition to the appetite and psychological factors above, factors in hospital eating habits when healthy, the type of illness and length of treatment and the presence of food from outside which is usually brought by family or other visitors also affect the amount of food leftovers of patients. The food menu served by the hospital also plays a significant role in the problem of patient leftovers.

## METHODS

This research is an analytical descriptive observational research, the data collection is done by cross sectional method with instantaneous variable measurement with the help of an instrument in the form of a questionnaire and direct observation. The sampling technique uses purposive sampling technique. The independent variable is the taste of the menu which includes the appearance and taste of food, the dependent variable is the rest of the food. Data collection was performed on 30 respondents, then all data were analyzed using statistical tests.

**RESEARCH RESULT****Subject Characteristics****Table 1.** Characteristics of Respondents by age, sex, occupation, education and leftovers.

No	Characteristics	$\Sigma N$	$\Sigma\%$
1	<b>Age (year)</b>		
	<19	1	3,3
	20-39	9	30
	40-59	19	63,4
	>59	1	3,3
2	<b>Gender</b>		
	Man	19	63,4
	Female	11	36,6
3	<b>Occupation</b>		
	TNI	14	46,7
	Civil servants	6	20
	Private	4	13,3
	Retired	5	16,7
	Does not work	1	3,3
4	<b>Education</b>		
	Junior high school	1	3,3
	Senior high school	12	40
	University	17	56,7
5	<b>Leftovers</b>		
	25%	13	43,3
	50%	17	56,7
	<b>Total</b>	<b>30</b>	<b>100</b>

**Table 2.** Distribution of Patient Food Appearance Assessment at TK II Hospital dr. Soepraoen Malang

Appearance Aspects	Appearance							
	Interesting		Enough		Not Interesting		Total	
	n	%	n	%	n	%	n	%
Food Color	24	80,0	6	20,1	0	0	30	100
Food Form	26	86,7	4	13,3	0	0	30	100
Serving method	14	46,7	16	53,3	0	0	30	100
Big Portion	26	86,7	4	13,3	0	0	30	100
Appearance	<b>24</b>	<b>80,0</b>	<b>6</b>	<b>20</b>	<b>0</b>	<b>0,0</b>	<b>30</b>	<b>100</b>

**Table 3.** Distribution of Patient Food Taste Assessments at Tk II Hospital Dr. Soepraoen Malang

Taste aspect	Taste							
	Interesting		Enough		Not Interesting		Total	
	n	%	n	%	n	%	n	%
Food Seasoning	7	23,3	23	76,7	0	0,0	30	100
Food Texture	14	46,7	16	53,3	0	0,0	30	100
Food Temperature	26	86,7	4	13,3	0	0,0	30	100
Maturity Level	26	86,7	4	13,3	0	0,0	30	100
<b>Taste</b>	<b>14</b>	<b>46,6</b>	<b>16</b>	<b>53,4</b>	<b>0</b>	<b>0,0</b>	<b>30</b>	<b>100</b>

### Statistical Test Results

#### 1. Test the linear regression equation model

From the results of statistical tests between variables using a linear regression test as in Appendix 6, the adjusted R square value of 0.884 means that this model can explain that the independent variables tested, namely the food appearance and food flavor variables, influence 88.4% of the dependent variable leftovers .

#### 2. Test the effect of independent variables on the dependent variable together

From the Anova table in the same Regression test the Sig value was obtained. (p value) = 0,000 means: the independent variable food appearance and food taste together affect the dependent variable food waste.

#### 3. Test the effect of each independent variable on the dependent variable

From the Coefficients table in the same Regression test, the Sig. (p value) for appearance variable = 0.032 and Sig. (p value) for the taste variable = 0,000 means: the food appearance variable influences the food waste variable, so does the food taste variable affects the food waste variable.

## DISCUSSION

### A. Food appearance

Food appearance is a combination of respondents' assessment of food color, food form, way of serving and portion size. In this study it can be seen in table 2 that the appearance of food in Tk.II Hospital Dr. Soepraoen Malang according to respondents is interesting (80%).

Food appearance is the first impression that is seen to determine which food is interesting to eat. The way of serving is part of the appearance of food. Food that is displayed when served will stimulate the sense of sight so that it causes tastes related to taste (Moehyi, 1992). Food serving gives special meaning to the appearance of food (Nuryati, 2008).

Of the four aspects of food appearance which include food color, shape of food, way of serving and portion size, only aspects of how to serve were considered sufficient by more than half of the respondents (53.3%), while the other three aspects were considered attractive. Researchers believe that a dish that is served with an attractive appearance will be able to cover the deficiencies that exist in other food appearance elements. For example white rice dishes will attract more attention when served with plates that are brightly colored in contrast and formed using molds such as star fruit, boiled eggs are not served rounded in a round, but jagged

cut so that the yolk can be seen and served with small green serving plates young so it looks contrasting and is expected to arouse the tastes of patients, tofu and tempeh are not cut square or dice but triangular cut as well as carrots can be cut star-shaped.

### **B. Taste of food**

Food appearance can be assessed through the sense of sight while the taste of food is determined through the sense of taste and smell. Food taste consists of several aspects namely seasoning, texture, temperature and level of food maturity. In this study more than half of the respondents (53.4%) stated that the taste of the food served was sufficient.

One aspect of food taste is food seasoning. Food seasoning can increase one's appetite and give a distinctive taste to a food. In this study stated that enough food seasonings were served at 76.7%. Food seasonings in Tk.II Hospital Dr. Soepraoen Malang are quite varied and come from fresh ingredients because in this hospital has a standard of spices so that the food produced becomes delicious.

Food seasoning is the key and determining factor of food taste. The aroma and taste caused by food seasoning is a reinforcing sense of arousing one's appetite, especially for Indonesians. Therefore the use of seasoning is very instrumental in the reception of food served in hospitals.

Researchers are of the opinion that the respondents' low assessment of food seasoning is more due to hospital food seasoning standards that are not in line with food seasonings at home and the addition of spices made by food processing officials not in accordance with seasoning standards, still using instincts and just about.

### **C. Leftovers**

Leftover food is the amount of food that is not consumed after food is served (Hirsch (1979) in Carr (2001)). This study discusses the food leftovers by patients compared to the amount of food served by hospitals that are not consumed. Some studies conducted in hospitals show that food waste ranges from 17 - 67% (Zakiah, 2005). In swimmingningtyas (2004) states that food scraps are said to be high or a lot if the patient leaves food scraps > 25%.

The results showed that the amount of food left between 25% to 50%. There are many leftovers of patients' food in the hospital which shows that the quality of the organization of food in the hospital is not yet optimal. This is due to the patient's leftovers can be an indicator of the success of the organization of food in the hospital. (MOH RI, 1991).

The amount of leftover food is the sum of all types / food menus that are served consisting of staple foods (rice), animal side dishes, vegetable side dishes, vegetables and fruit. In this study, the quality of the delivery of food at the Kindergarten II Hospital Dr. Soepraoen Malang used an indicator of the amount of leftovers that could not be assessed, because the respondents in this study were inpatients leaving food from the hospital, while patients who ate their food were not used as respondents.

### **D. Effect of Food Appearance on Food Remaining**

From the results of the linear regression test the effect of food appearance variables on the food waste variables obtained by the sign value. (p value) = 0.032, which means that there is an effect of food appearance variables on food waste variables. According to researchers, someone judges food by its appearance. Food with an attractive appearance will make many people to eat it, on the contrary food with a bad appearance makes people not want to eat it, even seeing it is not appetite especially in a sick condition. At TK II Dr. Soepraoen Malang Hospital, correction has been done at the time of procurement of food ingredients, food processing, even when cooking food. However, at the time of food storage, the correction of

cooked food will be done again. The hospital will provide food portions according to the type of diet or type of illness of the respondent.

#### **E. Effect of Food Taste on Food Remaining**

From the results of the linear regression test the effect of the food flavor variable on the food waste variable obtained by the sign value. ( $p$  value) = 0,000, which means that there is an effect of the food flavor variable on the food waste variable. Besides the appearance of food, the main factor that determines the taste is the taste of the food. If the appearance of food stimulates the nerves through the sense of sight that can arouse the taste to taste the food, then the next stage is determined by the stimulation of the sense of taste and smell. Food flavors include food seasonings, food texture, food temperature and level of maturity.

In TK II Dr. Soepraoen Malang Hospital, spices were given for food provided to patients. But sometimes it is limited depending on the type of diet given. When the respondent is given a special diet with restrictions on food seasonings, then the food seasoning will be measured so that the flavor of the spice becomes less pronounced. This might be different from respondents who have a habit of eating with a lot of spices.

#### **F. Effects of Food Appearance and Food Taste on Food Remaining**

From the results of statistical tests between variables using a linear regression test, the results show that there is an effect of the appearance of food and food taste on food scraps together ( $p = 0,000$ ) with adjusted R square = 0.884, meaning this model can explain that as much as 88.4% of the remaining food is influenced by the appearance of food and the taste of food simultaneously (together). The remaining 11.6% is influenced by other factors not examined.

From the results of the regression analysis, the value of  $R = 0.944$  was obtained. This shows that there is a very strong relationship between the appearance of food and the taste of food to the presence of food waste.

Food taste includes two main aspects, namely the appearance of food when served and the taste of food when eaten. Both of these aspects are equally important to consider so that they can truly produce satisfying food. (Moehyi, 2009).

According to researchers, someone judges food by its appearance. Food with an attractive appearance will make many people to eat it, after arising "desire" to eat, the taste of food from the food served is the second factor that is equally important and mutually supportive in determining the taste of food after the appearance of the food itself. This is also in line with other research on food scraps at RSUD Dr. Hasan Sadikin which states that there is a significant relationship between the appearance and taste of food with the rest of food respondents (Munawar, 2011).

### **CONCLUSION**

1. Patients who stated the appearance of food at the Kindergarten II Hospital dr. Soepraoen Malang with interesting categories as many as 24 people (80%) and enough categories as many as 6 people (20%).
2. Patients who stated the taste of food at TK II Hospital Dr. Soepraoen Malang with interesting categories as many as 14 people (46.6%) and enough categories as many as 16 people (53.4%).
3. Food menu is left between 25% to 50% of the overall food menu served.
4. There was an influence on the appearance of food scraps in the inpatient room of Dr. Soepraoen Malang Hospital ( $p = 0.032$ ).

5. There was an influence of taste on food scraps in the inpatient room of Dr. Soepraoen Malang Hospital ( $p = 0,000$ ).
6. There is an effect of appearance and taste on food scraps in the inpatient room of Dr. Soepraoen Tk II Hospital Malang ( $p = 0,000$ ).

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