

Original Article

Relationship Between Food Acceptability and The Amount of Leftover Food Among Patients in The Rehabilitation Room of Drug Dependence Hospital of Jakarta

Eka Puspitasari¹, Tri Ardianti Khasanah^{1*}, Adhila Fayasari¹

¹Department of Nutrition, Faculty of Health Science and Technology, Universitas Binawan, Jakarta Timur, Indonesia

(Correspondence author's e-mail, ardianti@binawan.ac.id / +62 857-2536-5400)

ABSTRACT

Acceptability of food is influenced by many related factors such as individual factor, food factor and environmental factor. The success of a food administration is often associated with the presence of leftover food consumed by the patient. Leftover food is also an indicator of the success of nutrition services in hospitals. This study aims to determine the relationship between food acceptability and the amount of leftover food among patients in the rehabilitation room of Drug Dependence Hospital of Jakarta. This was a descriptive study with a cross sectional approach. The study samples were selected using purposive sampling technique as many as 33 respondents. The results of bivariate analysis showed that there was a relationship between the leftover food and food temperature (p 0.017), the food serving time (p 0.006), and the suitability of cutlery used (p 0.009) with food acceptability. It can be concluded that there was a relationship between food acceptability and leftover food among patients in the rehabilitation room of Drug Dependence Hospital of Jakarta. It is recommended to conduct further study with a larger number of samples and involve other variables to find out which variables are related to food acceptability and food leftovers.

Keywords: *Cutlery, Acceptability, Leftover Food, Food Temperature, Serving Time.*

<https://doi.org/10.33860/jik.v17i1.1483>



© 2023 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY SA) license (<https://creativecommons.org/licenses/by-sa/4.0/>).

INTRODUCTION

Hospital management generally requires effective and efficient food management. Effective refers to the high success rate of treatment of patients and efficient means saving in the use of existing resources. Patient satisfaction is an important indicator that must be considered in health services. According to the Regulation of the Ministry of Health of the Republic of Indonesia in 2016, the Minimum Service Standard for patient satisfaction is above 95%¹. The success of a food administration is often associated with

the presence of leftover food of food consumed by the patients. Leftover food is one indicator of the success of nutrition services in hospitals.

Factors that affect leftover food in the hospital include appetite and perception of eating (food presentation and taste). Appetite is influenced by the state or condition of the patients. Feelings of displeasure and fear because of illness can lead to feeling of hopelessness make the patients to not consume the food served. Weak body condition, digestive tract disorders, different eating

patterns at home and socio-cultural factors that determine attitudes and preferences for food can influence the appetite of patients to finish the food served ².

Drug Dependence Hospital of Jakarta (RSKO) is a hospital that provides special services to patients with narcotics, psychotropic and addictive substances dependence. One of the services of the Drug Dependence Hospital of Jakarta is a rehabilitation unit. Rehabilitation is part of the process of healing mental and behavioural disorders due to psychoactive substance abuse. The rehabilitation program is divided into three, namely the regular program, special program and after care program. The regular program consists of an induction phase, primary phase, pre-entry phase and re-entry phase. Each of these phases has a different treatment time depending on the addiction condition or the psychological condition of the patients. Before entering the treatment room or enrolling rehabilitation program, patients must first enter the Medical Psychiatric Evaluation (MPE) room for 7 to 14 days. The long duration of treatment causes the patient to feel bored and memorize the food served. So, it is necessary to evaluate the acceptability of food after the patient receives food from the Nutrition Department.

Based on a study among patients with mental disorders (schizophrenia) at Prof Dr. Soerojo Mental Hospital of Magelang, there was a relationship between food acceptability and the meal cost among schizophrenic patients ($p = 0.000$) ³. A study on acceptability and its relationship with food leftover has never been conducted at the rehabilitation room of RSKO of Jakarta. The results of a patient satisfaction survey conducted by the Nutrition Department showed that there were still sub-optimal services, which was evidenced by data on leftovers reported in January 2020 at Drug

Dependence Hospital of Jakarta by 20.59%. Such data exceeds the standard set by the Indonesian Ministry of Health of 20%. This study aims to determine the relationship between food acceptability and leftover food among patients in the rehabilitation room of Drug Dependence Hospital of Jakarta.

METHOD

This was a quantitative study using descriptive analytical method with an observational approach. The design of this study was cross sectional. Statistical analysis was performed in the form of the Chi Square test at the rehabilitation room for 7 days which involved 33 samples. Data on the characteristics of respondents consisted of age, gender, period of hospitalization, and medical diagnose derived from the patient's medical records and interviews in the rehabilitation room of Drug Dependence Hospital of Jakarta. Data on food service quality data were obtained through questionnaires given to patients regarding food taste, food appearance, food serving time, food temperature, suitability of cutlery, staff reliability. Data were further scored. Data on leftover food were obtained using the food weighing method for each breakfast, mid-morning snack, lunch, afternoon snack and dinner. The data were then calculated. Analysis of research data was performed using SPSS and the chi square test to determine the correlation between independent and dependent variables. Secondary data in this study consisted of menu cycles, food ingredients used during food distribution hours which were obtained from the nutrition department report book of RSKO of Jakarta. This study has also obtained acceptance for ethical review from the Research Ethics Commission of Prof. Dr. HAMKA Muhammadiyah University number 03/21.06/01077.

RESULTS

Table 1. Frequency Distribution of Leftover Food.

Charakteristic	Category	n	%
The amount of	Large (>20%)	11	33.3
Leftover food	Small (≤20%)	22	66.7
Total		33	100

Table 1 showed that 11 respondents (33%) had a large amount of leftover food ($\geq 20\%$).

Table 2. Frequency Distribution of Relationship between Food Acceptability and the Amount Leftover Food.

Characteristic	Category	The Amount of Leftover Food				p-value	OR (95% CI)
		Large $>20\%$		Small $\leq 20\%$			
		n	%	n	%		
Food Color	Unattractive	2	28.6	5	71.4	1.000	0.756 (0.121-4.701)
	Attractive	9	34.6	17	65.4		
Form of Food	Inappropriate	2	16.7	10	83.3	0.249	0.267 (0.46-1.53)
	Appropriate	9	42.9	12	57.1		
Meal Portion	Inappropriate	4	40.0	6	60.0	0.690	1.52 (0.32-1.74)
	Appropriate	7	30.4	16	69.6		
Food Temperature	Inappropriate	7	36.4	4	63.6	0.017	7.875 (1.531-40.514)
	Appropriate	4	18.2	18	81.8		
Food Seasonings	Not Good	3	27.3	8	72.7	0.709	0.656 (0.134-3.205)
	Good	8	36.4	14	63.6		
Food Smell	Inappropriate	5	45.5	6	54.5	0.437	2.22 (0.48-10.08)
	Appropriate	6	27.3	16	72.7		
Food Texture	Hard	6	46.1	7	53.9	0.270	2.75 (0.258-11.38)
	Soft	5	25.0	15	75.0		
Food Taste	Bad Taste	3	30.0	7	70.0	1.000	0.804 (0.162-3.987)
	Good Taste	8	34.7	15	65.3		
Serving Time	Not On Time	7	70.0	3	30.0	0.006	11.08 (1.92-62.4)
	On Time	4	17.4	19	82.6		
Reliability of Food Serving Staff	Unreliable	2	25.0	6	75.0	0.687	0.593 (0.98-3.57)
	Reliable	9	36.0	16	64.0		
Suitability of cutlery	Inappropriate	10	52.6	9	47.4	0.009	14.44 (1.56-133.5)
	Appropriate	1	7.1	13	92.9		
Completeness of cutlery	Incomplete	4	28.6	10	71.4	0.719	0.686 (0.15-3.03)
	Complete	7	36.8	12	63.2		

*Information: Chi Square test, significant if p value was ≤ 0.005

Based on table 2, relationship between food colour and the amount of leftover food obtained a p value of $1.000 > 0.005$. Relationship between the form of food and the amount of leftover food obtained a p value of $0.249 > 0.005$. Relationship between meal portion and the amount of leftover food obtained a p value of $0.69 > 0.005$. Relationship between food temperature and the amount of leftover food obtained a p value of $0.017 < 0.005$. Relationship between food seasonings and the amount of leftover food obtained a p value of $0.70 > 0.005$. Relationship between food aroma and the amount of leftover food obtained a p value of $0.437 > 0.005$. Relationship between food texture and the amount of leftover food obtained a p value of $0.270 > 0.005$. Relationship between food taste and the amount of leftover food obtained a p value of $1.000 > 0.005$. Relationship between serving time and the amount of leftover food obtained a p value of $0.006 < 0.005$. Relationship between the

reliability of food serving staff and the amount of leftover food obtained a p value of $0.143 > 0.005$. Relationship between the suitability of cutlery and the amount of leftover food obtained a p value of $0.009 < 0.005$. Relationship between completeness of cutlery and the amount of leftover food obtained a p value of $0.719 > 0.005$.

DISCUSSION

There was no significant relationship between food color and the amount of leftover food in this study. Respondents stated that the color of the food served was appropriate (not overcooked), such as white staple food, colorful vegetables (lodeh), green melon and red Balado egg dish. The study finding is in line with a study conducted at the Jemur Sari Islamic Hospital in Surabaya (Habiba & Adriani, 2017) which found that there was no relationship between food color and the amount of leftover

food with a p value of 0.64⁴. Unattractive food colors can lead to leftover food⁵. Based on the results of study conducted in the rehabilitation room of the RSKO of Jakarta, the occurrence of leftover food was due to boredom when the respondents felt that they often got repeated menus. The relationship between the form of food and the amount of leftover food also did not show a significant value. This is due to the form of the food was suitable and attractive, so that respondents could chew their food easily. Such finding is different from a study conducted at the Ramelan Naval Hospital which found a significant relationship between the form of food and the amount of leftover food with a p value of 0.04⁶. Based on statistical test conducted, there was no relationship between meal portion and the amount of leftover food. Such finding is in line with a study conducted by Nurjanah, (2019), which found that there was no significant relationship between the amount of leftover food and meal portion⁷. Furthermore, respondents in this study stated that the meal portion was sufficient for their needs. Such finding is in contrast with a study conducted by Damayanti, (2016), which revealed that the large amount of leftover food was due to the respondents consumed food from outside the hospital⁸. The results of interviews with respondents regarding the food temperature served revealed that some respondents were accustomed to consuming food in a warm condition so that cold food would reduce their appetite and it caused leftovers. Such finding is in accordance with the study conducted by Kusuma, (2020)⁹.

In this study, there was no significant relationship between food seasonings and the amount of leftover food because the respondents stated that food seasonings were appropriate. Such finding is not in line with a study conducted by Tanuwijaya et al., (2018) and Tanuwijaya et al., (2019) which found that there was a significant relationship between food seasonings and the amount of leftover food. The results of interviews with respondents revealed that the seasonings used were appropriate. The curry vegetable seasoning was different from the seasonings in vegetable soup, and the amount of seasonings used was also considered appropriate by the respondents^{10, 11}. The results of observations made during study on the menu revealed that animal and vegetable side dishes served were left less because they smelled delicious and could stimulate appetite,

in contrast to vegetables which lacked a pleasant aroma so they tended not to be eaten. Such finding is in line with a study conducted by Kusuma, (2020)⁹.

Appropriate food texture will affect the taste and sensitivity of food so that it will result in less leftover food. This study revealed that there was no relationship between food texture and the amount of leftover food (p value = 0.27). Such finding is in contrast with a study conducted by Velita, (2016) which found that there was a relationship between food texture and the amount of leftover food (p value = 0.019)¹². The study finding regarding food taste is in line with a study conducted by Sundara, (2019) which showed that there was no relationship between food taste and the amount of leftover food (p value=1.000)¹³. Respondents in this study stated that the food taste was as expected. The large amount of leftover food was due to the respondents consumed food from outside the hospital.

The study finding regarding serving time is in accordance with a study conducted by Rina, (2017) which states that there is a relationship between food serving time and the amount of leftover food with a p value of 0.006¹⁴. Respondents stated that the time for serving food greatly affected food intake because too fast serving time would cause the respondents to feel full and too long serving time would make the food served cold, thereby reducing respondents' appetite. Based on the statistical test, relationship between the reliability of food serving staffs and the amount of leftover food did not have significant result because respondents felt that food serving staffs were reliable in providing information and carrying out their duties as food servers. The reliability of food serving staffs in serving food and in providing information to patients significantly affected patient satisfaction.

Statistical test using Chi Square (p 0.009) resulted in a significant relationship between the suitability of cutlery and the amount of leftover food. Such finding is in accordance with a study conducted by Nabella, (2018), Ronitawati et al., (2018), Ronitawati et al., (2021) and also Nurqisthy, et al., (2016) which found that there was a relationship between cutlery and the amount of leftover food^{15,16,17,18}. The difference between the cutlery used at home and the cutlery in the hospital would affect patients' appetite. Patients could not use cutlery that they usually use at

home such as glass plates or stainless steel spoons because of patient safety concerns. Cutlery made of plastic tends to be easily damaged and broken, and this was complained by the patients during the interview. Therefore, patients did not finish the food served.

In addition to the suitability of the cutlery, this study also observed the completeness of the cutlery used by the respondents. Most of the respondents (4.5%) stated that the cutlery used was complete. Complete cutlery consisted of serving utensils, namely closed plastic bents, plastic tablespoons and melamine cups. According to the respondents, all tools used were disposable or not reused. This was good because they were kept clean and more hygienic. Cutlery used could be immediately thrown away and not shared with other patients. Statistical test results showed that there was no significant relationship between the completeness of cutlery and the amount of leftover food in the rehabilitation room of Drug Addiction Hospital of Jakarta (p value=0.71). Such finding is in contrast with a study conducted by Mutmainah, et al., (2020) and Wirasamadi et al., (2015) which found that there was a relationship between the completeness of cutlery and the amount of leftover food^{19,20}. Complete cutlery at RSKO of Jakarta led to little amount of leftover food.

CONCLUSION

This study resulted in factors that affected food acceptability based on the amount of leftover food, namely the appropriate food temperature, the food serving time and the suitability of the cutlery used. It is recommended to conduct education and evaluation regarding the suitability of the cutlery used so as to be in accordance with food safety and patients can finish their food. In turn, it can have an impact on efficiency on the meal cost incurred. Future researchers can conduct a study with a larger number of respondents and observe other variables to determine their correlation with leftover food.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

REFERENCES

1. Kementrian Kesehatan Republik Indonesia. Peraturan Menteri Kesehatan Republik Indonesia No. 43 Tahun 2016 tentang Standar Pelayanan Minimal Bidang Kesehatan.2016.
2. Kementrian Kesehatan Republik Indonesia. Peraturan Menteri Kesehatan No. 78 Tentang Standar Pelayanan Gizi Rumah Sakit. 2013.
3. Julia D, Nurohmi S, Rahadiyanti A, Damayanti AY. Hubungan Daya Terima Makanan Dengan Biaya Sisa Makanan Pada Pasien Skizofrenia. *Darussalam Nutrition Journal*. 2018 Jun 1;2(1):19-28.
4. Habiba RA, Adriani M. Hubungan Depresi, Asupan, dan Penampilan Makanan dengan Sisa Makan Pagi Pasien Rawat Inap (Studi di Rumah Sakit Islam Jemursari Surabaya). *Amerta Nutr*. 2017;1:198-208. <https://doi.org/10.20473/amnt.v1i3.2017.198-208>
5. Pamungkas TU., & Subandriani DN. Faktor- faktor Yang Berhubungan Dengan Sisa Makanan Pada Pasien Kanker Payudara Di Rumah Sakit Dadi Keluarga Purwokerto: 2017.
6. Kartini RF, Primadona S. Hubungan Bentuk, Rasa Makanan, dan Cara Penyajian dengan Sisa Makanan Selingan Pada Pasien Anak di Rumah Sakit Angkatan Laut Dr. Ramelan Surabaya. *Amerta Nutrition*. 2018;2(3):212-8.
7. Nurjanah, H. Hubungan Ketepatan Besar Porsi Terhadap Kepuasan Pasien Dan Sisa Makanan Pada Makanan Lunak Di RS Muhammadiyah Dan Santo Yusuf Bandung. *Repository Poltekkes Kemenkes Bandung*: 2019.
8. Damayanti S. Hubungan variasi menu, besar porsi, sisa makanan dan tingkat kepuasan pasien pada makanan lunak di Rumah Sakit Umum Daerah Cengkareng. *Ilmu Gizi*. 2016.
9. Kusuma HS. Hubungan Suhu Makanan Dengan Sisa Makanan Pada Pasien Diet Tktp Di Rumah Sakit Roemani Muhammadiyah Kota Semarang. *Jurnal Gizi*. 2020 Jun 10;9(1).

10. Tanuwijaya LK, Sembiring LG, Dini CY, Arfiani EP, Wani YA. Sisa makanan pasien rawat inap: analisis kualitatif. *Indonesian Journal of Human Nutrition*. 2018 Jun 30;5(1):51-61.
11. Tanuwijaya LK, Novitasari TD, Arfiani EP, Wani YA, Wulandari DE. Kepuasan pasien terhadap variasi bahan makanan di rumah sakit. *Jurnal Gizi*. 2019;8(1).
12. Velita, S. Pengaruh Penyajian dan Cita Rasa Makanan terhadap Sisa Makanan Pasien di Rumah Skit Umum Daerah Deli Serdang Tahun 2016. *Jurnal Pembangunan Wilayah & Kota*; 2016; 1(3), 82–91.
13. Sundara S. Hubungan Rasa, Aroma dan Suhu Makanan dengan Sisa Makanan pada Pasien Rawat Inap Kelas III di RSUD dr. Soekardjo Kota Tasikmalaya. *Repository Universitas Jenderal Soedirman*: 2019.
14. Rina A, Noor T, Setyowati S. Hubungan Ketepatan Waktu Penyajian Dan Mutu Makanan Dengan Sisa Makanan Pasien Dewasa Non Diet Di RSU PKU Muhammadiyah Bantul. *Repository, Poltekkes Kemenkes Yogyakarta*: 2017.
15. Nabella D A. Hubungan Nafsu Makan, Besar Porsi, Dan Rasa Makanan, Serta Faktor Lingkungan, Dengan Sisa Makan Siang Pasien Rawat Inap Di Ruang Angrek RSU BUNDA Palembang. *Repository UNSRI*: 2018.
16. Ronitawati P, Puspita M, Citra K. Faktor-faktor yang berhubungan dengan sisa makanan di rumah sakit umum daerah Koja Jakarta Utara tahun 2017. *HSG Journal*. 2018 Aug 16;3(1):57-76.
17. Ronitawati, P., Fujima, M., Sitoayu, L., Sa'pang, M. and Dewanti, L.P., 2021. Hubungan Tingkat Kepuasan Dan Kualitas Pelayanan Makanan Terhadap Biaya Sisa Makanan Dan Zat Gizi Yang Hilang Pada Pasien Di Rumah Sakit Umum Daerah Koja Jakarta. *Gizi Indonesia*, 44(1), pp.77-86.
18. Nurqisthy A, Adriani M, Muniroh L. Hubungan kepuasan pelayanan makanan dengan tingkat kecukupan energi dan protein pasien di rumah sakit Universitas Airlangga Surabaya. *Media Gizi Indonesia*. 2017;11(1):32-9.
19. Mutmainah, N., Windiyaningsih, C. and Dewanto, D., 2020. Determinan Yang Mempengaruhi Besaran Sisa Makanan Pada Pasien Geriatri, Penyakit Dalam Dan Obgyn Di Ruang Rawat Inap RS Bhayangkara Brimob Tingkat III Jakarta. *Jurnal Manajemen dan Administrasi Rumah Sakit Indonesia (MARS)*, 4(1), pp.1-12.
20. Wirasamadi NL, Adhi KT, Weta IW. Analisis sisa makanan pasien rawat inap di RSUP Sanglah Denpasar Provinsi Bali. *Public Health and Preventive Medicine Archive*. 2015 Jul 1;3(1):88-95.