

Analysis Of Portion Standards, Menu Patterns, And Food Acceptability On Levels Of Availability And Consumption Of Energy And Nutritional Substances In Ma'had Tahfizhul Qur'an Al-Firqoh An- Najiyah Food Implementation In Malang District

Zafira Putri Madani¹⁾, Nurul Hakimah²⁾, Rani Nurmayanti³⁾

¹⁾ Bachelor of Applied Nutrition and Dietetics, Health Polytechnic Ministry of Health Malang

²⁾Health Polytechnic Ministry of Health Malang

³⁾Health Polytechnic Ministry of Health Malang

E-mail: rani_nurmayanti@poltekkes-malang.ac.id

Abstract: *The background* : of this study is that the nutritional needs of adolescents are relatively large, because they are still experiencing growth. In addition, adolescents generally carry out higher levels of physical activity compared to other ages. In addition, female adolescents are an age group that is vulnerable to nutritional problems, especially anemia, so that more nutrients are needed. A balanced menu pattern and portion standards will greatly affect the nutritional value of each dish. **The aim of the study** : was to analyze portion standards, menu patterns, and food acceptability on the level of availability and consumption levels of energy and nutrients in Ma'had Tahfizhul Qur'an Al-Firqoh An-Najiyah Food Service in Malang Regency. **This research method** : is a type of research that is descriptive qualitative with a cross-sectional study design, meaning that the observations are made at the same time. **The results** : of the analysis show that most of the menus served by the organization of Ma'had food are not included in the balanced category. The breakfast as a whole falls into the unbalanced category by (100%), this is because the food organizers only provide a menu of animal side dishes once a day at dinner, and twice a day for vegetable side dishes at breakfast and lunch. The presentation of staple foods, vegetables and fruit is in the category of less than the standard portion, but the types of animal side dishes and vegetable side dishes exceed and almost meet the set portion standards. Acceptability of food shows that respondents do not like the color and texture of the food served by the food organizer, this is due to the repetition of the menu which results in a lack of interest of the respondents in food. inadequate portion standards and budgets. the adequacy of nutrients such as energy, fat, carbohydrates, vitamins C and Fe (iron), is still classified as a severe deficit, this is due to the lack of compliance with the proportions of female students, interest in the food menu, lack of awareness of fulfillment of nutrients, and unhealthy eating patterns Wrong.

Keywords: Menu Patterns, Portion Standards, Food Acceptability, Availability and Adequacy of Energy and Nutrients

INTRODUCTION

Anemia is a severe health problem among adolescent girls at 47.9%. In Indonesia, the prevalence of anemia in adolescent girls is 27.2% in the age group of 15-24 years. Meanwhile, the prevalence of anemia in adolescent boys is 20.3%. This causes anemia to be one of the main health problems among adolescents, especially adolescent girls in Indonesia (Aprilianti, et al.2021)

Adolescents in the age group of 16-18 years are adolescents in the transition period from children and adults. Balanced nutrition at this time greatly determines their maturity in the future (Susilowati and Kuspriyanto, 2016). The nutritional needs of adolescents are relatively large, because they are still growing. In addition, adolescents generally perform higher physical activity compared to other ages, so more nutrients are needed (Segres in Sudrajat, 2016).

According to the results of Ilmi's research (2014) at the Putri Ummul Islamic Boarding School Makassar believers know that the quality of food is acceptable, but the nutritional value of food, especially energy, only reaches about 50% of the total needs of students. Not much different from the study, the results of Taqhi's research (2014) show that the quality of food in the Hubulo Gorontalo Islamic boarding school is also acceptable, but the nutritional value of food, especially energy, only meets 76% of the total needs of students. The results of Ningtyas (2018) research also show that the consumption of student meals is still in the deficit category because there is no calculation of nutritional adequacy in Islamic boarding schools.

Islamic boarding schools are Islamic religious educational institutions managed by the community or an institution both for educational units and as a forum for the implementation of education (Ministry of Health of the Republic of Indonesia, 2013). The rapid development of Islamic boarding schools has caused more and more students, so the Islamic boarding schools provide dormitories as a place for students to live and provide other facilities such as meals (Yasmadi, 2005).

In the implementation of food at Islamic boarding schools, the development is still relatively simple. There are several factors that can affect menu planning in Islamic boarding schools, such as limited costs and equipment as well as the skills of food handlers. These limitations can result in a lack of variety of food served, fixed menus and portions of food that are not in accordance with the needs of students (Harsiwi, 2017).

In this study, the research took place at Ma'had Tahfidzhul Qur'an Al-Firqoh An-Najiyah in Malang Regency which is one of the largest boarding school-based tahfidz quran-based tahfidz huts in Malang Regency, quoted from the official website of Ma'had Tahfidzhul Qur'an Al-Firqoh An-Najiyah, based on the results of a preliminary study on December 31, 2021 at Ma'had Tahfizhul Qur'an Al-Firqoh An-Najiyah in Malang Regency there are students and women with an age range 10-20 years old, approximately 800 people.

METHODS

The type of qualitative descriptive research is a method that aims to create an objective picture or descriptive about a situation using numbers, starting from data collection, interpretation of the data as well as the appearance and results (Arikunto, 2006). and analyzed in a descriptive manner carried out by *observational* method with a *cross sectional* study design This means that observations are carried out at the same time and crosssectional research only observes once and measurements are made on the subject variables at the time of the study (Notoatmojo, 2010).

This research was carried out from August 22 to August 28, 2022, with observations of Portion Standards, Menu Patterns, and Food Acceptability on the Availability and Adequacy of Energy and Nutrients in Food Administration. Located at Ma'had Tahfizhul Qur'an Al-Firqoh AnNajiyah in Malang Regency, East Java, Indonesia.

The research population is the entire 1st, 2nd and 3rd grade students who are in Ma'had Tahfizhul Qur'an Al-Firqoh An-

Najiyah in Malang Regency as many as 135 students.

The sampling method is by *non-random* sampling with a *purposive sampling system*. According to Sugiono, (2001) stated that *purposive sampling* is a technique for determining samples with certain considerations with criteria set based on the purpose of the research.

RESULTS AND DISCUSSION

The results of the menu pattern can be seen in table 1, showing the large population of respondents as many as 210 portions of santriwati food within a period of 7 days with 3 meal times.

Table 1. Distribution of Menu Patterns in Ma'had Tahfizhul Qur'an Al-Firqoh An-Najiyah Malang.

Kategori Pola Menu	Pagi		Siang		Malam	
	n	%	n	%	n	%
Seimbang	0	0	0	0	0	0
Kurang Seimbang	210	100	210	100	210	100
Tidak Seimbang	0	0	0	0	0	0
Jumlah	210	100	210	100	210	100

Source : Primary Data, 2022

Based on table 1, it shows that during the 7 days of observation in the implementation of Ma'had Tahfizhul Qur'an Al Firqoh An-Najiyah Malang, the menu served was mostly not included in the balanced category. Breakfast as a whole is included in the unbalanced category of (100%), in table 1 it shows that the menu pattern is in the category of unbalanced, this is because food organizers only provide a menu of animal side dishes once a day at dinner time, and two vegetable side dishes a day at breakfast and lunch time.

This can be caused by the absence of a menu cycle and a master menu set so that there is no repetition of food menus, and the lack of types of food sources such as fruits and animal side dishes. The menu served at Ma'had Tahfizhul Qur'an Al-Firqoh An-Najiyah Malang is a menu made by the kitchen staff themselves according to the available food ingredients. Ma'had Tahfizhul Qur'an Al-Firqoh

An-Najiyah Malang has a fixed menu for breakfast, namely rice, vegetable side dishes and vegetables, at lunch the menu served is rice, vegetable side dishes and vegetables, the dinner menu served is rice, animal side dishes, vegetables. The fruit menu is only available on Mondays and Thursdays at dinner time.

The vegetable side dishes served at the food administration at Ma'had Tahfizhul Qur'an Al-Firqoh An-Najiyah Malang are, chicken, fish, seafood, meat, eggs, and processed chicken and fish meat in the form of frozen food such as nuggets and rolade. The processing of animal side dishes is processed using a frying pan and boiling is served 1-2 pieces of animal side dishes.

The vegetable side dishes served at the food event at Ma'had Tahfizhul Qur'an Al-Firqoh An-Najiyah Malang are tofu and tempeh. At breakfast, the vegetable source used is tempeh in the amount of 2 pieces, while at lunch, it is tofu or tempeh 1 piece each. The processing of vegetable side dishes every day is fried.

The vegetable menu is served for the students at Ma'had Tahfizhul Qur'an Al-Firqoh An-Najiyah Malang at every mealtime. The processing method that is often carried out is clear vegetables, sautéed, chopped and given coconut milk. For the type of vegetables used, there are still repetitions such as in the soup menu, kale cah, and stir-fried chickpeas.

In the implementation of meals at Ma'had Tahfizhul Qur'an Al-Firqoh An-Najiyah Malang, there are several components that have reached the standard portion that is in accordance with the recommendations for nutritional adequacy in the guidance of diat according to gender and age. In food sorting, the officer did not weigh, only based on the estimate of the food officer. The results of the percentage of serving food portions are differentiated according to the food component to the observation day, in figure 1 shows the standard portion of staple foods.

1. Standard Distribution of Portion Sizes to Staple Foods

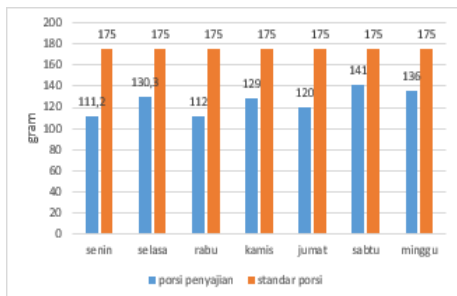


Figure 1. Standard distribution of portions and portion weighing results to staple foods

Figure 1. shows that on the blue axis bar is the acquisition of serving portions and the orange axis bar is the standard provision of portions, the results of the average portion standard of staple foods still do not meet the standard portion according to the recommendations for nutritional adequacy in the guide according to gender and age, the average percentage of the results of the weighing of the selection is 63% of the standard portion, which shows that the portion served is included in the category of not according to the size of the portion, This is because the restriction has not yet been enforced and the average student orders food according to their personal wishes and the food organizer does not restrict food.

2. Standard Distribution of Servings Against Animal Side Dishes

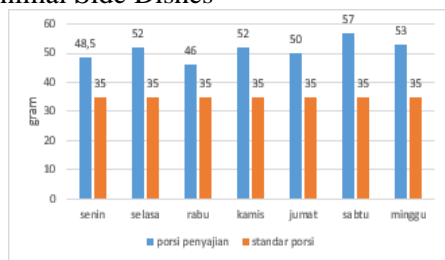


Figure 2. Standard distribution of portions and portion weighing results for animal side dishes

It shows that on the blue axis bar is the acquisition of serving portions and the orange axis bar is the standard provision of portions, the standard result of the average

portion of animal side dishes exceeds the standard portion according to the recommendation of nutritional adequacy in the guide according to gender and age, the average percentage of the weighing results of the sorting is 142% of the standard portion, which shows that the portion served is included in the category according to the size of the portion.

3. Standard Distribution of Servings Against Plant-Based Side Dishes

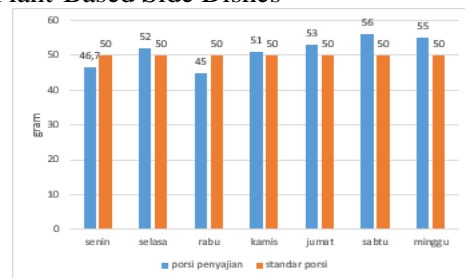


Figure 3. Standard distribution of portions and portion weighing results for plant-based side dishes

Figure 3. shows that on the blue axis bar is the acquisition of serving portions and the orange axis bar is the standard provision of portions, the results of serving the average portion of vegetable side dishes meet the portion standards according to the recommendations of nutritional adequacy in dietary guides according to gender and age, the average percentage of the results of weighing the selection is 100% of the standard portions, which shows that the portions served are included in the category according to the size of the portion.

4. Standard Distribution of Servings and Results of Portion Weighing to Vegetables

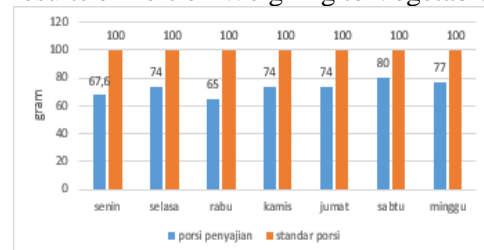


Figure 4. Standard distribution of portions and results of portion weighing on vegetables

Figure 4. shows that on the blue axis bar is the acquisition of serving portions and the orange axis bar is the standard provision of portions, the average result of the standard portion of vegetables does not meet the standard portion according to the recommendation of nutritional adequacy in the guide according to gender and age, the average percentage of the results of the weighing of the serving is 75% of the standard portion, which shows that the portion served is included in the category of not according to the size of the portion, This is because the restriction has not yet been enforced and the average student orders food according to their personal wishes and the food organizer does not restrict food.

5. Standard Distribution of Servings and Results of Portion Weighing to Fruit

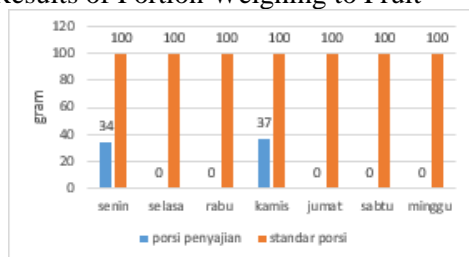


Figure 5. Standard distribution of portions and portion weighing results to fruit

Figure 5. shows that on the blue axis bar is the acquisition of serving portions and the orange axis bar is the standard provision of portions, the average result of the standard portion of fruit does not meet the standard portion according to the recommendation of nutritional adequacy in the guide according to gender and age, the average percentage of the weighing results of the serving is 0-30% of the standard portion, which shows that the portion served is included in the category of not in accordance with the size of the portion, This is due to the lack of budget for the type of fruit food components, the type of

fruit food only exists on Mondays and Thursdays provided for iftar takjil.

In the types of food components in staple foods, vegetables and fruits, many are classified as less than the standard portion, but in the types of animal side dishes and vegetable side dishes exceed and almost meet the set portion standards.

Power receive In the implementation of food in Ma'had Thfidzul Qur'an, it is necessary to do it to determine the effectiveness of the evaluation of food serving, the power is carried out using a questionnaire with dorm weighing of food leftovers to make it easier to analyze the asylum test on the food served, the following table shows the acceptability results according to the type of food component.

Table 2. The distribution of acceptance uses plate waste according to the type of food.

	Standar Porsi (gram)	Total Sisa (gram)	Presentase (%)
Makanan Pokok	169400	7835,75	4,62
Lauk Hewani	193600	8271,75	4,27
Lauk Nabati	84700	4966,75	5,86
Sayur	145200	8609,75	5,92
TOTAL	592900	29684	5,0

From Table 2. shows that the percentage of Total Food Waste according to all components with the highest total standard portion is found in the vegetable component, which is 5.9% (8609.75 grams), and the lowest in the animal side dish component is 4.2% (8271.75 grams), from the above data it can be concluded that the total of all food waste in the food organizer of Ma'had Tahfidzul Quran (<20%) can be categorized as not high in food waste according to (Ministry of Health of the Republic of Indonesia, 2008).

This can affect the fulfillment of macronutrient adequacy, while according to Emilia in Rahayu (2020) the imbalance between the food consumed and the needs of adolescents will cause undernutrition or overnutrition problems. Malnutrition in adolescents occurs due to erratic dietary patterns, changes in psychosocial factors characterized by changes in the transition of childhood to adulthood.

According to the above acceptance results, it shows that the respondents' food waste (<20%) of the standard portion provided, is included in the category of not high food waste according to (Ministry of Health of the Republic of Indonesia, 2008). Food waste is the volume or percentage of food that is not eaten up and thrown away as garbage and can be used to measure the effectiveness of the menu (Komalawati, 2005).

The availability of energy and nutrients is obtained from the calculation of weighing food portions compared to nutritional adequacy figures in adolescents aged 16-18 years, availability is influenced by the serving portion and the balance of the menu pattern consumed, here is table 3 Distribution of energy and nutrient availability to the food preparation menu.

Table 3. Distribution of energy and nutrient availability to food management menus

Menu Hari Ke-	Zat Gizi					
	E (kkal)	P (g)	L (g)	KH (g)	Vit. C (mg)	FE (mg)
1	1788	77,7	44,9	261	20	0,05
2	2170	63,4	54	252	13	1,4
3	2310	90	40	237	34	3,1
4	2122	87,6	64	265	14	1,2
5	1969	81,6	53	302	17	8
6	1997,9	62	60,9	272,3	21	1,5
7	2142	40	69	293	9	3
Rata-rata	2083,5	71,7	55,1	268,9	18,2	2,6
AKG	2650	75	85	400	75	15
Persentase (%)	78,6	95,6	64,8	67,2	24,3	17,3
Kategori	defisit tingkat sedang	normal	defisit tingkat berat	defisit tingkat berat	defisit tingkat berat	defisit tingkat berat

In table 3, it shows that the average percentage of availability obtained from the portion of food served at food organizers in ma'had for 7 days with a percentage of 95.6% (normal category), namely protein, this is because respondents have portions of animal and vegetable side dishes close to the standard portion determined by the diet guide according to age and gender. The energy in table 3 is included in the category of moderate deficit, in fat, carbohydrates, vitamin c, and Fe are included in the category of severe deficit. This is due to the lack of standard portions for staple foods, vegetables, and fruits, the lack of food costs also leads to the fulfillment of food availability.

Factors that can cause the availability of energy and nutrients to be classified as a deficit

include because the portion of food served still cannot meet the recommended portion standards according to the AKG (2019) adolescents aged 16-18 years.

The portion of food itself is closely related to the cost budget provided by a food organization.

It was found that macronutrients that are important for adolescent health were still lacking in adequate fulfillment, this was due to the lack of interest in vegetables and the lack of fruit serving at food organizers in one week.

Table 4. The average distribution of the fulfillment of energy and nutrient adequacy of students aged 16-18 years at Ma'had Tahfizhul Qur'an Al-Firqoh An-Najiyah Malang.

Menu Hari Ke-	Zat Gizi					
	E (kkal)	P (g)	L (g)	KH (g)	Vit. C (mg)	FE (mg)
1	1778	75	51	262	25	3
2	1766	75	50	256	23	3
3	1839	76	52	265	21	2
4	1861	74	51	261	26	2,6
5	1888	75	50	261	24	2,6
6	1873	75	50	280	25	2
7	1830	75	49	255	24	2
Rata-rata	1833,57	75	50,4	262,8	24	2,4
AKG	2650	75	85	400	75	15
Persentase (5)	69,1	100	59,3	65,7	32	16,3
Kategori	defisit tingkat berat	normal	defisit tingkat berat	defisit tingkat berat	defisit tingkat berat	defisit tingkat berat

Source : Primary Data, 2022

Based on the table, it can be seen that the average fulfillment of energy and nutrients for 7 days in protein is classified as normal or good. This can be caused by the preference test for animal and vegetable side dishes is almost high, and in the presentation of portions of animal and vegetable side dishes are classified according to the size of the portion according to the provisions of the portion standards in the diet guide.

In the results of table 4 of the distribution above, other nutrients such as energy, fat, carbohydrates, vitamins C and Fe (iron), are still classified as severe deficits, this is due to the lack of fulfillment in the selection of students, specialization in food menus, lack of implementation of the importance of adequate nutrition in the same amount, and the wrong diet (gillespie. S, et al.2001 in Sudrajat, 2016) the adequacy of energy and nutrients in the majority of samples is in the category of severe deficit. This is in line with Basic Health Research data

which states that the percentage of energy and nutrient consumption for adolescents in Indonesia is still lacking. The amount of food available in the dormitory, the rules about food in the dormitory, their attitude (acceptability) towards certain foods, and the quantity of food served also affect the intake of energy and nutrients (Gillespie. S, et al.2001 in Sudrajat, 2016).

Micronutrient deficiencies, especially iron and vitamin c, can cause anemia, adolescents are an age group that is prone to nutritional problems, anemia is caused by several factors such as chronic blood loss, lack of iron intake, inadequate iron absorption, and increased need for iron. In adolescent girls, anemia is caused by a lack of nutrient intake from food consumed daily. Some young women limit their intake of certain foods or reduce the amount of food they consume because they want to have an ideal weight. (Aprilianti, et al.2021)

CONCLUSIONS

1. The menu served by the Ma'had food organization is mostly not included in the balanced category. Breakfast as a whole is included in the unbalanced category of (100%), this is because food organizers only provide a menu of animal side dishes once a day at dinner time, and two vegetable side dishes a day at breakfast and lunch time.
2. The portion serving of staple foods, vegetables and fruits is classified as less than the standard portion, but in the types of animal side dishes and vegetable side dishes exceed and almost meet the set portion standards
3. Acceptability according to food waste received from food waste weighing compared to the initial portion shows $\leq 20\%$ which can be categorized as not high food waste (Ministry of Health, RI. 2008)
4. The availability of energy and nutrients is still in the category of a severe deficit, due to the lack of accuracy in serving portions at portion standards and insufficient budgets.
5. The distribution of nutritional adequacy such as energy, fat, carbohydrates, vitamins C and Fe (iron), is still classified as a severe deficit, this is due to the lack of fulfillment in the orientation of students, specialization in food menus, lack of awareness of nutrient fulfillment, and wrong diet.

REFERENCES

1. Almatsier, Sunita 2011. *Basic Principles of Nutrition Science*. Jakarta: PT. Gramedia Library
2. Anggraeni, Elisabet Yunaeti and Rita Irviani. 2017. *Introduction to Information Systems*.
3. Astri Ivo Dangkua, Djunaidi M. Dachlan, St. Fatimah. 2014. *Journal of Study Programs*
4. Azwar. A. 1990. *Introduction to Environmental Health Science*. Jakarta : Mutiara
5. Bakri Bachyar, Ani Intiyati, and Widartika. 2018. *Bhratara Implementation System*
6. Budianto, A, K. 2009. *Indonesian Food, Nutrition, and Human Development: and Micro, Food Waste, Nutritional Status and Quality Satisfaction Level of Santri Dishes in the Food Administration System (Study at Al-Fityan Integrated Islamic High School, Kuburaya Regency)*. JOURNAL OF STUDENTS AND HEALTH RESEARCH:Unmuh Pontianak BasicsBasics of Nutrition Science. University of Muhammadiyah Malang. Press 1-16.with Nutritional Status in Adolescent Women. *Journal of the Nursing Study Program, University of Riau. JOM Vol.2, No 2*.
7. Ministry of Health of the Republic of Indonesia, 2013, *Guidebook for Hospital Nutrition Services*.
8. Ministry of Health of the Republic of Indonesia, 2003, *Hospital Nutrition Service Guidebook*.
9. Dieny, F. 2014. *Nutritional Problems in Adolescent Girls*. Yogyakarta: Graha Ilmu
10. Director General of Medical Services, Directorate of Special and Private Hospitals, Jakarta.
11. Fikawati, Sandra et al. *Child and*

- Adolescent Nutrition. Depok: Rajawali Pers; 2017. Graha Ilmu.
12. Hardiansyah, et al. 2011. Adequacy of energy, protein, fat and carbohydrates.
 13. Hardiansyah and Supriasa. 2016. Theoretical and Applied Nutrition Science. Jakarta: ECG
 14. Hartono. 2000. Nutrition Care of EGC Medical Publisher Hospital. Jakarta: <http://himagizi.lk.ipb.ac.id/files/2014/01/AKG2013Hardin-Final-Edits/bersama.pdf>. Retrieved 15 March 2017. Pontianak. *Nutrition Sciences, Faculty of Public Health, Hasanuddin University, Dr. Wahidin Sudirohusodo Hospital, Makassar*
 15. Irianto Koes, 2010. *Public Health Sciences*. Bandung: Alfabeta Journal, Department of Community Nutrition, University of Indonesia, Jakarta.
 16. Kaenong, K.M. et al. 2014. Overview of Macronutrient Intake, Nutritional Status and Nutritional Adequacy
 17. Ministry of Health of the Republic of Indonesia. 2013. *Nutritional Adequacy Rate (Akg)*. 2013. Food Institutions. Jakarta.
 18. Marlenywati, Ismael Saleh, Popy Lestari. 2017. Overview of Macronutrient Intake.
 19. Moehyi, S. 1992. Implementation of Institutional Food and Catering Services. Jakarta:
 20. Nida, Kairun. 2011. Factors Related to Patient Food Waste
 21. Notoatmodjo. 2012. Health Research Methodology. Jakarta : PT. Rineka Cipta
 22. Pujiati, Arneliawati, Siti Rahmalia, 2015. The Relationship Between Eating Behaviors
 23. Hospitalization at Sambang Lihum Mental Hospital. Thesis. Borneo College of Health Sciences, Banjarbaru.
 24. Inpatient food waste was used using the 6-point Comstock Scale Visual Estimation Method. *Journal of Indonesian Clinical Nutrition*. 2:1
 25. Sugiyono, 2001. Research Method, Bandung: CV Alfa Beta
 26. Sulistyoningsih, Hariyani. 2011. Nutrition for Maternal and Child Health. Yogyakarta:
 27. Susyani., Paryanto, E., and Sudargo, T. 2005. Accuracy of Officers in Determining the Level of Satisfaction of Students in the Food Delivery System at Pondok Pesantren Putri Ummul Mukminin Makassar. *Utama Widya*. Yogyakarta: CV. Andi Offset. Arafani, Elma Lusiana, et al. 2019