The Effect of Consumption of Tila Fish Meatballs (*Oreochromis Niloticus*) on Increasing HB Levels in Ii Trimester Pregnant Women in the Telaga Jaya Health Center Area

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ABSTRACT

During pregnancy, the body needs more Iron than before pregnancy. Iron in pregnant women is required to form blood, red, fetus, and placenta. Formulation study: How Influence Consumption Freshwater Fish Meatballs to Increased HB Levels in Second Trimester Pregnant Women. Research purposes that know the influence of consumption of freshwater fish meatballs to enhancement HB levels in the Mother's second trimester of pregnancy. Types of research with use method experiment. Study This was conducted at the Telaga Jaya Health Center, Gorontalo Regency. Deep sample study This is a pregnant mother in the Telaga Jaya Community Health Center area, totaling 63 people, who used the method experiment. Results of bivariate data analysis There is an influence of Frequency consumption of Tilapia fish meatballs one time/ day, two times/ day, and three times/ day to improvement Hb levels in second-trimester pregnant women in the Telaga Jaya area with p-value = $0.00 < α = 0.05$, Yes influence of the level of compliance consumption Tilapia fish meatballs to improvement Hb levels in the mother second trimester pregnant in the Telaga Jaya Community Health Center area with p-value = $0.01 < α = 0.05$ and exists influence before and after consume Tilapia fish meatballs to increased Hb in the mother second trimester of pregnancy with p-value = $0.00 < α = 0.05$.

KEYWORDS: Tilapia fish meatballs, Hb levels, Pregnant women

INTRODUCTION

Consumption in Indonesia is still considered low and unequal between regions, so the government has continued implementing various improvement programs for fish consumption since President Megawati's era. Policy This is also done to optimize the role of sector fishery in the economy because, according to Dahuri (2018), the potential economy sector marine fishery reached 1.6 times the national GDP. However, until now, the role of sector fishery in the National GDP is only 3.25% (KKP, 2016).

Fish are beneficial food for the body. Apart from sea fish, which are very popular, like salmon and tuna, we can also get nutrition and benefits that are preserved from freshwater fish. One type of freshwater fish that can be consumed is Tilapia. These fish live in rivers, ponds, or lakes with shallow salt content. With different habitats, content, and nutrition, Freshwater fish nutrition is also distinct from sea fish.

She requires additional Iron during pregnancy, 9 grams in the second and 13 grams in the third trimester. The Mother suffering from pregnancy anemia is marked with complaints of fast, tired, frequent, dizzy eyes and dizzy fireflies. According to the Republic of Indonesia Ministry of Health (2019), anemia can result in disturbance or obstacles to the growth cell body or the brain. Lack of level 5 hemoglobin in the blood can give rise to symptoms Like anemia, frequently called 5L (lethargic, tired, weak, exhausted, inattentive), accompanied by Dizzy head turning, eyes, sleep, and difficulty concentrating Because of lack of rate oxygen in the brain.

Based on the KIA report from the Gorontalo Provincial Service, in 2020, there were 26248 mothers pregnant, of which 336 people (2.9%) were pregnant and suffered anemia. Seventy-four mothers were recorded as pregnant women in the Telaga Jaya Community Health Center area (Real Data from Telaga Jaya Community Health

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Center 2023). Pattern eating less is good, and one reason for anemia during pregnancy is the lack of consumption of foods containing Iron.

The potential for fish in Indonesia, especially in Gorontalo Regency, is still very abundant and utilized. Based on the description of general condition regions (RKPD et al., 2021) in Gorontalo Regency, a vast lake is Lake Limboto. However, the lake is not yet optimally utilized specifically for cultivating freshwater fish like Tilapia, as innovation is needed to use freshwater fish to increase Hb in the mother's second trimester of pregnancy.

Parrot fish is Not yet utilized optimally because it is generally used only in fresh preparations, such as fried and baked. To him, that is necessary to diversify product worth. One of them is a material standard meatball. Meatball is one of the results of the processed fishery, consisting of a mixture of tilapia meat, ground with additional spices and ingredients in a binder, printed round, and so on, cooked in a stew. Product verification will determine whether, with consuming it, the Mother's HB level can increase, and the way measured will be based on the frequency of eating and obedience in consuming meatballs.

METHODS

This research is quantitative research using descriptive statistical analysis research methods. This research uses a cross sectional design. The population is all objects or subjects that have at least one characteristic in common (Irwan, 2022). The population in this study is all pregnant women in the third trimester in 7 health centers in Gorontalo City, totaling 263 pregnant women. The sample in this study was 154 subjects from 7 health centers in Gorontalo City, provided that the sample used sample criteria, namely: Pregnant women III trimester who were given MMS, pregnant women who were at home during the research and pregnant women who were willing to become respondents. The data analysis technique uses the chi square test.

RESULTS AND DISCUSSION

Table 1. Influence Consumption Freshwater Fish Meatballs Based on Frequency of Eating (1 Time a Day, 2 Times a Day, 3 Times a Day) Against Increase in HB Levels in Second Trimester Pregnant Women in the Telaga Jaya Community Health Center Area

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	19,273	1	19,279	27,767	,000 [b]
Residual	42,341	61	,694		
Total	61,614	61			

Based on table 1, it shows that the p-value is <0.05, namely 0.000, which means that there is a significant influence on the frequency of eating on the Hb levels of pregnant women in the second trimester at the Telaga Jaya health center.

Table 2. Influence level obedience Eat consumption of freshwater fish meatballs to enhancement HB levels in second-Trimester pregnant women in the Telaga Jaya Community Health Center area

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4826.763	24	201.115	2,248	.012
Within Groups	3400.317	38	89,482		
Total	8227.079	62			

Based on table 2, it shows that the p-value is <0.05, namely 0.012, which means that there is a significant influence of eating compliance on the Hb levels of pregnant women in the second trimester at the Telaga Jaya health center.

Table 3. Differences in consumption before and after consumption of freshwater fish meatballs to enhancement HB levels in second-trimester pregnant women in the Telaga Jaya Community Health Center area

	N	Correlation	Sig.
Pair Hb before & Hb after	63	,464	,000

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Based on table 3, it shows that the p-value is <0.05, which is 0.000, which means there is a significant difference between before consuming and after consuming tilapia fish meatballs on the Hb levels of pregnant women in the second trimester at the Telaga Jaya health center.

Influence Consumption Freshwater Fish Meatballs Based on Frequency of Eating Against Increase in HB Levels in Second Trimester Pregnant Women in the Telaga Jaya Community Health Center Are

Based on the results analysis bivariate in Table 1, it can be obtained results that of 63 samples, there were 15 mothers with abnormal HB levels ≤ 12 grams/dL in the second trimester of pregnancy and 48 others with Normal HB levels > 12 gr/ dL in the work area Telaga Jaya Health Center. Analysis results in a bivariate show that frequency Eat own mark significance α = 0.00. This means that eating frequency influences pregnant women's Hb levels. This matters because pregnant ladies consume Tilapia fish meatballs with obedience. This is visible from the results evaluation level obedience consume Tilapia fish meatballs aside from the results of the food recall carried out show that types of foods consumed by pregnant every day are Already classified as containing foods good nutrition, i.e., carbohydrates, proteins, and fats.

This is the result of the research by Saimin et al. (2019 et al.), which obtained that material food sources the carbohydrates consumed by mothers who are Mother Esther to regnant need intakThanLots before pregnancy. Fulfillment-enhanced food intake is essential for the mother's and unborn fetus's health. Study This shows that of the most common protein sources consumed are fresh fish. It is a very valuable positive that fresh fish has more protein content.

Improvement efforts in consumption Mother pregnant must keep using source food locally such as fish, eggs, green vegetables (spinach, kale, and leaves moringa), papaya, banana, orange, and tomato cook. Apart from that, you also need to pay attention to the nutritional status of the mother's pregnancy and the consumption of Tilapia fish meatballs by existing programs in the field. Intake sources deficient in energy, protein, fat, and carbohydrates can influence the growth of the fetus and birth weight of the baby. Balanced nutrition and pattern proper eating are necessary for mothers' fulfillment during pregnancy (Saimin et al., 2019).

Influence of Food Consumption Compliance Level Freshwater Fish Meatballs to Increase in HB Levels in Second Trimester Pregnant Women in the Telaga Jaya Community Health Center Area

Based on the results analysis bivariate in Table 2, obtained results that of 63 samples found Abnormal HB levels ≤ 12 grams/dL are levels of obedience in consuming Tilapia fish meatballs ≤ 95% Analysis results bivariate show that frequency Eat own mark significance α = 0.01. This means that compliance influences the Hb levels of pregnant women in the second trimester in the Telaga Jaya Health Center area. Compliance in study This is obedience and regularity. Mother pregnant consumes Tilapia fish meatballs by treatment.

Obedience to consume foods containing Iron, like Tilapia fish meatballs, is measured by the accuracy of the amount of Tilapia fish meatballs consumed, the accuracy method of Tilapia fish meatballs, and the frequency of daily consumption. Tilapia Fish Meatballs is one of the efforts important in preventing and overcoming anemia, especially anemia that lacks Iron. Compliance with a mother pregnant with This average Hb level means that the pregnant consumes Tilapia fish meatballs according to established recommendations.

Obedience treatment is consuming drugs/substances, nutrition recommended by the doctor or officer, and other appropriate health at the right time and dose. Treatment only will be effective if the patient obeys the rule in use recommendation. If there is a recommendation to use up drugs/substances nutrition, then the patient must consume it until exhausted (Nababan, 2018).

Difference Consumption Before and After Consumption Freshwater Fish Meatballs to Increase in HB Levels in Second Trimester Pregnant Women in the Telaga Jaya Community Health Center Area.

Based on the results analysis bivariate in Table 3, obtained results that the average HB levels before and after consuming Tilapia fish meatballs experience an increase, i.e., from an average Hb level ≤ 12 grams/dL to an average normal HB level ≤ 12 gr/ dLResults analysis bivariate show that frequency Eat own mark significance α = 0.00. This means there is a difference in consumption before and after consumption of freshwater fish meatballs to enhance the rate of HB in a mother's second-trimester pregnancy in the community health center area, Lake Victorious. Circumstances Ibi caused Because frequency and compliance consume Tilapia fish meatballs indeed executed as recommended. Besides that, based on the food recall carried out, it is a combination of the food consumed provides donation intake nutrition other so that gives addition to amount cell blood red too.

Consumption of food source substance Iron This can obtained from fish, eggs, meat, beef, vegetables, corn, kale, and others. Anemia in pregnancy is caused by many women who start their pregnancy with reserve insufficient food. When pregnant, the body needs more Iron than before pregnancy. Substance iron in women is required to form cells, blood red, fetus, and placenta. In principle, the pattern of eating well for pregnant mothers is a pattern that has a diverse and varied intake of balanced nutrition. Pattern food with a balanced menu is essential for developing the fetus's content. However, sometimes, a candidate's mother does not have enough notice (Proverawati, 2010).

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CONCLUSIONS

Based on results from research that has been done, several conclusions are as follows:

1. The content rate of nutrition in tilapia fish meatballs is carbohydrates 37.20%, protein 12.60%, fat 1.12%, Fe 1.3685 mg, and water 44.74%.
2. There is an influence of Frequency consumption of Tilapia fish meatballs one time/ day, two times/ day, and three times/ day to improve Hb levels in the second trimester pregnant women in the Telaga Jaya area with p-value = 0.00< α = 0.05
3. There is an influence of compliance with the consumption of Tilapia fish meatballs to improve Hb levels in the mother's second trimester of pregnancy in the Telaga Jaya Community Health Center area with p-value = 0.01 < α = 0.05.
4. There is an influence before and after consuming Tilapia fish meatballs to increased Hb in the mother's second trimester of pregnancy with p-value = 0.00 < α = 0.05

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