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The Effect of Nutritiona Counseling with Booklet Media on Food Waste in Hypertension Patients

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ABSTRACT

Background: *Food waste indicates the success of nutrition services in hospitas; food waste exceeding 20% indicates failure in food management. Nutrition counseling plays a vita role in providing knowledge, attitudes, and behaviors regarding diet so that it can reduce food waste. High Blood Pressure (hypertension) is an increase in blood pressure in the arteries. The number of hypertensive patients at Praya Regiona Hospita in November 2022 will be around 630.*

Objective: *This study's purpose was to determine the effect of nutritiona counseling on changes in plate waste in patients with hypertension at RSUD Praya.*

Research Methods: *This research used a robust quasi-experimenta design, employing a nonrandomized control group pre-and post-test. The sample was carefully selected through purposive sampling, with 22 participants divided equaly into treatment and control groups. The data was anayzed using the Mann-Whitney U test. The counseling intervention was delivered through a face-to-face lecture method using booklet media. The study was conducted over one month at Praya Regiona Hospita, ensuring a comprehensive and rigorous approach to the research.*

Research Result: *The study showed differences in patient food waste (staple food, vegetable side dishes, anima side dishes, and vegetables) before and after nutritiona counseling. Still, the difference was insignificant (p-vaue = >0.05). Changes in food waste do not significantly affect staple foods, anima side dishes, vegetable side dishes, and vegetables.*

Conclusion: *Nutritiona counseling using booklet media does not affect food waste in hypertensive patients at Praya Regiona Hospita.*

BACKGROUND

In hospitas, nutrition services are provided and adapted to the patient's condition based on clinica condition, nutritiona status, and body metabolic status. Inpatient nutrition services start with nutritiona assessment, diagnosis, and intervention, including planning, food provision, counseling/education, nutritiona counseling, and nutritiona monitoring and evauation (PGRS, 2013).

The patient's nutritiona condition dramaticaly influences the disease-heaing process. Conversely, the course of the disease can affect the patient's nutritiona condition. The patient's condition often worsens because the body's organs' dietary requirements are unmet. Impaired organ function will worsen with disease and manutrition (Amatsier, 2013).

Efforts to fulfill nutritiona needs have been made through nutritiona services, such as providing food or diets. The need for nutrients when sick is not only dependent on factors that influence heath (age, gender, physica activity, and specia conditions) but is aso influenced by the severity and type of disease. The need for energy and nutrients aso changes during illness and is adjusted to the type and severity of the disease (Amatsier, 2013).

One key strategy to enhance patient food intake is implementing nutritiona counseling. The primary goa of nutritiona counseling is to boost patient motivation to adhere to the prescribed diet based on their specific heath condition. This form of education and counseling can aso profoundly impact patient knowledge, which is crucia for effective disease management and therapy adherence.

Nutrition counseling at Praya Regiona Hospita is carried out when the patient is going home or, according to a doctor's referra, for a diet consultation for the illness they are suffering from. Counseling at Praya Regiona Hospita uses leaflet media adapted to the patient's disease or condition.
Besides leaflets, booklets are another medium that can help improve patient knowledge and attitudes. Booklets are aso an example of print media that can convey information. A booklet is a smal book measuring 14.8x21 cm, with at least five pages but no more than 48 pages outside the cover. The booklet's contents are clear, firm, easy to understand, and enjoyable. Therefore, researchers are interested in conducting counseling using booklet media at Praya Regiona Hospita.

High blood pressure (hypertension) is increased blood pressure in the arteries. In genera, hypertension is a condition without symptoms, where abnormaly high pressure in the arteries causes an increased risk of stroke, aneurysm, heart failure, heart attack, and kidney damage (ASDI 2019). Data obtained in November 2022 at Praya Regiona Hospita showed that around 630 patients diagnosed with hypertension were in class 1, 2, and 3 treatment rooms.

Emira's research (2017) showed that there was a change in lunch leftovers in patients with diabetes mellitus at RSI Klaten before and after receiving nutritiona counseling, which previously reached 86.21% of leftover staple food, 51.72% of remaining anima side dishes and 41% remaining vegetable side dishes. 38%, and remaining vegetables as much as 44.83%. Then, after receiving nutritiona counseling, 34.48% of the remaining staple foods, 10.34% of the remaining anima side dishes, 27.59% of the remaining vegetable side dishes, and 10.34% of the remaining vegetables.

Libriani's research (2020) showed a change in lunch waste in typhoid fever patients before and after receiving nutritiona counseling, which previously reached 91.7% of staple food waste, 91.7% of vegetable side dishes, 77.8% of anima side dishes, 97.2% of vegetable side dishes, and fruit 36.1%. Then, after receiving nutritiona counseling, the remaining staple foods were 66.7%, vegetable side dishes 75.0%, anima side dishes 528%, vegetables 80.6%, and fruit 11.1%.

The data collection results at the Praya Regiona Hospita Nutrition Instalation showed that inpatients still had food waste. Data on food waste in October 2022 shows that the average food waste in inpatients at Praya Regiona Hospita is above the standard the Indonesian Minister of Heath set in 2008. The following is data on food waste in October for staple foods: 25%, anima side dishes: 25%, 22.4%, vegetable side dishes: 24.8%, and vegetable food waste: 26.6%.

Based on the above, researchers have researched the effect of changes in food waste before and after nutritiona counseling using booklet media for hypertensive patients at Praya Regiona Hospita. This research aims to determine the effect of nutritiona counseling on food waste in hypertensive patients at Praya Regiona Hospita.

RESEARCH METHODS

The research was conducted in class 3 at Praya Hospita in March 2023. It used an experimenta method, precisely a quick experiment. The type of Quasy Experiment research method design used is a "Nonrandomized control group pre-and post-test." The sample members in the treatment and control groups were not randomly selected.

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The research subjects were patients diagnosed with hypertension who were given a low-sat diet and underwent hospitaization in the class 3 inpatient ward of Praya Regiona Hospita. The tota research sample consisted of 22 people, 11 of whom were in the treatment group and 11 of whom were in the control group. The treatment group was patients diagnosed with hypertension who were hospitaized in Tunjung Room 2, while the control group was patients diagnosed with hypertension who were hospitaized in Tunjung Room 1. In this design, observations were made of the sample before and after being given treatment. The intervention provided in this study was nutritiona counseling twice. In the treatment group, food waste was weighed before and after being given nutritiona counseling using booklet media. In contrast, in the control group, food waste was weighed before and after being given nutritiona counseling without booklet media.

The independent variable in this research is nutritiona counseling, and the dependent variable is food waste. The research instruments used can be seen in the following table:

Data	Instruments	Documentation
Nutrition Counseling	Hypertension Booklet	Photo
Blood pressure	Tensiometer, medica records	Patient biodata form
Leftovers	Food waste recording form	Food waste recording form

RESULTS AND DISCUSSION

Subjects consisted of 22 patients diagnosed with hypertension who were hospitaized at Praya District Hospita and who met the inclusion criteria, consisting of 11 people in the intervention group and 11 people in the control group. The characteristics of the subjects that have been studied are presented in the following table:

Table 1 Frequency Distribution of Subject Characteristics

Karakteristik	Perlakuan		Kontrol		*p-value*
	n	%	n	%	
Jenis Kelamin					
Laki-Laki	0	0	11	100	0.000
Perempuan	11	100	0	0	
Total	11	100	11	100	
Umur					
30-49	5	45,4	3	27,3	0.429
≥50	6	54,6	8	72,7	
Total	11	100	11	100	

P-vaue = Mann Whitney test result at α= 0.05

From Table 1, the Wilcoxon test was carried out in the treatment and control groups to obtain the average waste of staple foods, vegetable side dishes, anima side dishes, and vegetables before and after nutritiona counseling. It was found that the average food waste decreased before and after nutritiona counseling, but a p-vaue> 0.05 indicates that nutritiona counseling has no effect on staple food waste in hypertensive patients in Tunjung Rooms 1 and 2 at Praya Regiona Hospita.

The results of the Mann-Withney test on staple food leftovers, vegetable side dishes, anima side dishes, and vegetables before and after nutritiona counseling in the treatment group and control group obtained a p-vaue >0.05, which means there was no significant difference in breakfast leftovers in the treatment group and control group in inpatient hypertensive patients at Praya Regiona Hospita.

Table 2 Distribution of statistica test results of breakfast leftovers in hypertensive patients at Praya Regiona Hospita in the treatment group and control group based on type of food

Type of Food	Information	Intervention Group (n=11)	Control Group (n=11)	p
		Mean ±SD	Mean ±SD	
Staple food	Before	91,54±87,920	96,15±70,878	0,876
	After	35,69±57,698	53,69±55,182	0,268
	Px	0,38	0,47	
	Δ	55,85	42,46	0,856
Vegetable side dishes	Before	18,00±17,926	14,38±18,035	0,661
	After	5,08±13,048	9,77±15,568	0,367
	Px	0,050	0,176	
	Δ	12,92	4,61	0,689
Anima side dishes	Before	11,38±16,235	8,92±14,829	0,695
	After	2,038±5,0269	1,62±5,824	0,661
	Px	0,075	0,68	
	Δ	9,342	7,3	0,815
Vegetable	Before	21,31±22,321	25,46±22,367	0,871
	After	22,08±21,70	23,85±24,02	0,873
	Px	0,880	0,880	
	Δ	0,77	1,61	0,877

p-vaue = Mann Whitney test result at α= 0.05
px vaue = Wilcoxon test result at α= 0.05
Δ vaue = Mann Whitney test result at α= 0.05

From Table 2, the Wilcoxon test was carried out in the treatment and control groups to obtain the average remaining staple food, vegetable side dishes, anima side dishes, and vegetables before and after nutritiona counseling. It was found that the average leftover food decreased before and after nutritiona counseling, but a p-vaue> 0.05 indicates that nutritiona counseling has no effect on staple food waste in hypertensive patients in Tunjung Rooms 1 and 2 at Praya Regiona Hospita.

The results of the Mann-Withney test on staple food leftovers, vegetable side dishes, anima side dishes, and vegetables before and after nutritiona counseling in the treatment group and control group obtained a p-vaue >0.05, which means there was no significant difference in breakfast leftovers in the treatment group and control group in inpatient hypertensive patients at Praya Regiona Hospita.

Table 3 Distribution of statistica test results for leftover lunch in hypertensive patients at Praya Regiona Hospita in the treatment group and control group based on type of food

Type of Food	Information	Intervention Group (n=11)	Control Group (n=11)	p
		Mean ±SD	Mean ±SD	
Staple food	Before	87,15±65,239	89,77±72,950	0,938
	After	19,15±26,564	51,54±62,076	0,254
	Px	0,007	0,28	
	Δ	68	38,23	0,290
Vegetable side dishes	Before	20±21,475	18,46±23,635	0,934
	After	3,08±7,610	6,54±16,33	0,870
	Px	0,030	0,128	
	Δ	16,92	11,92	0,790
Anima side dishes	Before	19,46±33,273	5±13,229	0,267
	After	2,69±9,707	17,69±28,412	0,109
	Px	0,138	0,173	
	Δ	16,77	12,69	0,082
Vegetable	Before	49,23±48,760	72,08±56,894	0,393
	After	40,62±47,486	56,85±38,006	0,170
	Px	0,445	0,463	
	Δ	8,63	15,23	0,898

p-vaue = Mann Whitney test result at α= 0.05
px vaue = Wilcoxon test result at α= 0.05
Δ vaue = Mann Whitney test result at α= 0.05

From Table 3, the Wilcoxon test was carried out in the treatment group and control group to obtain the average remaining staple food, vegetable side dishes, anima side dishes, and vegetables before and after nutritiona counseling. It was found that the average leftover food decreased before and after nutritiona counseling, but a p-vaue> 0.05 indicates that nutritiona counseling has no effect on staple food waste in hypertensive patients in Tunjung Rooms 1 and 2 at Praya Regiona Hospita.

The results of the Mann-Withney test on staple food leftovers, vegetable side dishes, anima side dishes, and vegetables before and after nutritiona counseling in the treatment group and control group obtained a p-vaue >0.05, which means there is no significant difference in lunch waste in the treatment group and the control group. Control in inpatient hypertension patients at Praya Regiona Hospita.

Table 4 Distribution of statistica test results of dinner leftovers in hypertensive patients at Praya Regiona Hospita in the treatment group and control group based on type of food

Type of Food	Information	Intervention Group (n=11)	Control Group (n=11)	p
		Mean ±SD	Mean ±SD	
Staple food	Before	71,77±66,959	91,15±88,169	0,597
	After	48,15±59,23	56,23±50,504	0,619
	Px	0,123	0,202	
	Δ	23,62	34,92	0,856
Vegetable side dishes	Before	15,31±19,202	19,38±16,870	0,552
	After	6,77±12,584	7,23±18,431	0,682
	Px	0,116	0,109	
	Δ	8,54	12,15	0,174
Anima side dishes	Before	9,08±16,142	9,31±18,759	0,793
	After	3,85±13,868	3,69±9,160	0,611
	Px	0,465	0,109	
	Δ	5,23	5,62	0,572
Vegetable	Before	36,38±41,808	50,54±34,508	0,300
	After	36,15±38,583	29,31±20,613	0,979
	Px	0,878	0,091	
	Δ	0,23	21,23	0,105

p-vaue = Mann Whitney test result at α= 0.05
px vaue = Wilcoxon test result at α= 0.05
Δ vaue = Mann Whitney test result at α= 0.05

From Table 4, the Wilcoxon test was carried out in the treatment and control groups to obtain the average waste of staple foods, vegetable side dishes, anima side dishes, and vegetables before and after nutritiona counseling. It was found that the average food waste decreased before and after nutritiona counseling, but a p-vaue> 0.05 indicates that nutritiona counseling has no effect on staple food waste in hypertensive patients in Tunjung Rooms 1 and 2 at Praya Regiona Hospita.

The results of the Mann-Withney test on staple food leftovers, vegetable side dishes, anima side dishes, and vegetables before and after nutritiona counseling in the treatment group and control group obtained a p-vaue >0.05, which means there was no significant difference in dinner leftovers in the treatment group and control group in inpatient hypertensive patients at Praya Regiona Hospita.

Based on the research results, in terms of age, the 22 subjects in this study were mainly 12 people aged ⩾50 and 10 people aged 30-49 years. One of the factors in the occurrence of hypertension is age; as age increases, the greater the risk of developing hypertension. This is in line with research (Sari et a., 2019), which states that increasing age becomes a risk factor for hypertension. Increasing age causes physica changes in the body, such as thickening of the arteria wals due to the buildup of collagen in the muscle layer, so blood vessels will narrow and become stiff starting at the age of 45. Apart from that, there is aso an increase in periphera resistance and sympathetic activity and a lack of baroreceptor sensitivity (blood pressure regulator), and the role of the kidneys, kidney blood flow, and glomerular filtration rate decreases.

Based on the research results, the gender of the 22 subjects in this study was 11 femae and 11 mae. This was because the treatment group in the Tunjung 2 inpatient ward only contained femae patients, and the control group in the Tunjung 1 inpatient ward only contained mae patients.
Gender is an interna factor that influences food waste. According to research results (Ronitawati et a., 2020), there is no relationship between gender and patient food waste. In this study, there were 36 respondents,

dominated by 24 women and 12 men. However, in research (Djamauddin, 2018), gender influences the occurrence of food waste, which means there is a relationship.

This research examined staple food waste, anima side dishes, vegetable side dishes, and vegetables. The research results, looking at morning, afternoon, and evening food waste, show that in the treatment group, the average food waste before and after nutritiona counseling decreased, as did the control group.

So, based on the results above, even though there was a decrease in food waste before and after nutritiona counseling, it is possible that the decrease in food waste was not only influenced by the provision of nutritiona counseling; looking at the two sample groups, both showing the same results but with different treatments. Other influencing factors probably caused the decrease in food waste include the patient's preference for certain types of food and menus, the patient's eating habits, consumption of food from outside the hospita, and the patient's inability to finish the food served in the hospita.

Research from Puspita Rahayu (2018) confirms that additiona food is usualy brought by the patient's family or caregivers outside of the food recommended by the hospita because this food is the patient's favorite. This makes it very likely that the food served to the patient is never finished or not eaten at al.

Food outside the hospita is an externa factor; patients often complain about food from the hospita, which is undoubtedly a trigger for food waste; in research (Nafies, 2019), there is a relationship between food outside the hospita and food waste. This is confirmed by the results of research (Ronitawati et a., 2020), which states that food outside the hospita can make patients complete quickly. When meatime arrives, patients often delay eating so that food quaity decreases.

In terms of interna factors, including the patient's psychologica state, feeling unhappy and hopeless because of his illness, which can cause loss of appetite (Moehyi, 1992), it can aso be caused by the patient's physica condition which determines the type of diet given, if the patient is still weak or there is nausea and vomiting. Hence, it takes a long time to finish the food. The appearance of the food may aso cause externa factors. For class 3 patients, the food is served with plastic mica; perhaps the method of serving it with plastic mica is less attractive, and the portions are aso limited, thus affecting the patient's appetite to finish their food.

Apart from the two factors above, the environment of the treatment place aso influences food waste, which is included in the externa factors category based on the patient's treatment class, most of which is taken in treatment class III rooms where one room contains eight beds. In treatment Class II, one room contains four beds; in treatment Class I, one room contains two. According to Ronitawati's research results (Ronitawati et a., 2020), there is a relationship between the environment of the treatment area and food waste, where the comfort of the atmosphere around the treatment room can influence the patient's appetite, and this is further strengthened by the results of research (Pontoh et a., 2018)—treatment of patients with leftovers.

Judging from the results of observations and weighing of food waste when compared with treatment and control, both groups experienced a decrease in the average vaue of food waste, so there was no significant difference between the two groups even though they received different treatment. The statistica test results show no difference in the influence of providing nutritiona counseling with booklet media to hypertensive patients at Praya Regiona Hospita.

This research is in line with the results of research (Kartini, 2021), which states that when compared with intervention and control food waste, both groups experienced a decrease in the average vaue of food waste, so there was no significant difference between the two groups even though they received treatment. Different. The results of research on the pre-test intervention and control variables for food waste show that, in genera, there is no difference in food waste between the two sample groups. Meanwhile, after the intervention (post-test), it showed no effect of providing nutritiona counseling using leaflets on food waste in hypertensive patients.

Likewise, the results of research conducted by (Libriani, 2020) show that the patient's remaining food before counseling consisted of 91.7% of staple foods, 91.7% of vegetable side dishes, 77.8% of anima side dishes, and 97.2% of vegetables and fruit. 36.1%. Meanwhile, the patient's remaining food after counseling was 66.7% staple foods, 75.0% vegetable side dishes, 528% anima side dishes, 80.6% vegetables, and 11.1% fruit. There was a change in the patient's remaining food after counseling, but it did not

significantly affect the remaining staple food, vegetable side dishes, anima side dishes, and vegetables. Then, there is a significant influence on the fruit.

Nutrition counseling aims to ensure that clients follow the counselor's suggestions, make positive changes in behavior when solving problems, make decisions, develop awareness, and develop self-acceptance. Counseling can aso help clients help themselves by changing their thoughts or lifestyle. Implementing a diet or controlling foods that pose a disease risk still needs to be better understood (Kartini, 2021).

The results of this study do not match the research by Yulianti and Prihatin (2014) regarding differences before and after counseling. The average residua difference was 9.850%, the standard deviation was 5.086, the lowest difference was 7.951%, and the highest was 11.749%, which means there is a difference.

Meanwhile, research by Manik et a. (2019) at RSUD Dr. Soedarso Pontianak stated that providing nutritiona counseling using leaflets with leftover food had an effect. The results of the respondents' food waste were obtained by weighing the respondents' food waste starting from food waste, namely rice, anima side dishes, vegetable side dishes, and vegetables. There were more leftover staple foods and vegetables than anima and vegetable side dishes.

More nutritiona information will affect the patient's food consumption, so patient eating recommendations are significant. Nutrition counseling is expected to raise patient awareness of food intake. Nutritiona counseling can help the disease-heaing process by improving nutrition, looking for aternative problem solutions, and choosing the most appropriate way of solving problems for the patient (Kartini, 2021).

The difference in food waste before and after counseling among respondents may be due to respondents still not being focused enough to listen carefully and receive the information that was conveyed during counseling, or it could aso be influenced by the condition or location of the counseling, which was carried out in the inpatient room where there were other patients and waiting for patients who are carrying out other activities so that patients find it difficult to understand the information provided (Mappiare, 2006).

This study has limited samples in that the two groups are not the same in terms of characteristics, especialy gender, so bias occurs due to the incomparability of the treatment and control groups.

CONCLUSIONS

Based on the results of the research and discussion "The Effect of Nutritiona Counseling using Booklets on Leftovers from Hypertension Patients at Praya Regiona Hospita," the following conclusions were obtained:

Most research subjects were> over 50 years old, and some were 30-49. The gender of the subjects in the treatment group was al femae, and in the control group, al mae.

Judging from the research that has been carried out, it shows that in the patient's food waste both before and after nutritiona counseling, the most food waste is in the type of vegetable food, namely with an average of 68.9% of food waste.

Nutritiona counseling using booklet media does not affect food waste in hypertensive patients at Praya Regiona Hospita.

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