Communication Trough Nutrition Booklet Increases Perception and Partisipation

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COMMUNICATION THROUGH NUTRITION BOOKLETS INCREASES PERCEPTION AND PARTICIPATION IN THE MANAGEMENT OF ANEMIA IN CESAREAN MOTHERS

ABSTRACT

Background: WHO estimated that more than 200 million women of reproductive age. Severe postpartum anemia after cesarean was strongly associated with a predelivery Hb level. The adverse effects of anemia have an impact on health and economic development. WHO estimates that 12.8% of maternal deaths in Asia can be attributed to anemia.

Objective: This research aims to identify the effect of the anemia booklet on the perception, participation, and hemoglobin level of cesarean mothers in management anemia.

Methods: This study used a quasi-experiment with the pre-posttest without control groups design for Haemoglobin and perception variables, and deep interview for participatory variables using nutrition booklets as treatment. Involving 30 participants, the sampling technique was carried out by purposive sampling. Statistical test using paired t-test with CI 95%.

Results: The relationship between Hb before and after giving the booklet with a correlation coefficient of 0.333 with a significance of 0.84 (p-value > 0.05). Perceptions before and after understanding the booklet obtained p-value = 0.000 <0.05. Management before and after giving the booklet obtained p-value = 0.005 <0.05. The results of interviews found that after receiving information, mothers' perceptions improved in terms of understanding anemia, recognizing signs and symptoms, preventing anemia, consuming protein, types of drinks, and good nutrition for anemia management. After giving anemia management communication through booklets, there was an increase in the mother's participation in consuming snacks, drinking after mealtime, and improving personal and environmental hygiene.

Conclusion: Communication through booklets affects maternal perceptions and management actions in preventing anemia, but does not affect hemoglobin (Hb). It can also increase the perception and participation of mothers in terms of consuming snacks, drinking after mealtimes as well as personal and environmental hygiene.

Keywords: anemia, cesarean, participatory, booklet

INTRODUCTION

More than 200 million women of reproductive age in SEAR (South-East Asia Region) were anemic, according to WHO (191 million non-pregnant women and 11.5 million pregnant women). Anemia's negative consequences on health and economic development include poor pregnancy outcomes, cognitive impairment, and reduced labor capability. Among low- and middle-income countries, iron deficiency anemia is among the top ten causes of years lost to disability, and it is the seventh greatest cause of lost years due to disability in women. Anemia in women and children is a public health issue that affects a number of Southeast Asian nations (Indonesia, Thailand, Sri Lanka, and the Democratic People's Republic of Korea), while others

(India, Bangladesh, Nepal, and Timor Leste) are experiencing health issues, a harsh society while dietary anemia is the most common, infection-related inflammation and hereditary conditions such hemoglobinopathy are also common. While nutritional anemia is widely considered to be the most prevalent, inflammation caused by infection, and genetic causes such as hemoglobinopathy also contribute to the incidence of anemia. Only a few countries have managed to reduce the prevalence of anemia significantly. While evidence of informed recommendations for preventing anemia exists, many policy gaps and program barriers limit the effectiveness of anemia intervention programs in SEAR member countries. At the current rate of reduction, the 2nd Global Nutritional Target for 2025 is a 50% reduction in anemia in women of reproductive age, which is unlikely to be met (WHO,2011). Postpartum anemia is associated with maternal and perinatal morbidity (Butwick, A.J,2016).

Globally, two billion people are anemic, which includes 315 million (95% CI: 291–340) in the Southeast Asia Region (SEAR). Iron deficiency, the main contributor to anemia, is the most pervasive nutritional disorder while other micronutrient deficiencies including folate and vitamin B12 also contribute to anemia. Recent evidence suggests a greater role for inflammatory anemia caused by parasitic infections including malaria. Congenital disorders such as hemoglobinopathy also contribute to anemia (WHO,2012).

In 2012, the World Health Assembly Resolution passed the Comprehensive Implementation Plan on Maternal, Infant and Young Child Nutrition, with six Global Nutrition Targets for 2025. The second target is a 50% reduction in anemia in women of reproductive age (WRA) 15-49 years. Anemia is interlinked with other Global Nutrition Targets; stunting, low birth weight, exclusive breastfeeding, and weakness, focused actions needed to achieve the anemia target by 2025, and the 2nd and 3rd Sustainable Development Goals (SDGs) to reduce all forms of malnutrition and ensure a healthy life for all ages at all ages by 2030 (WHO,2015).

Comprehensive data on the prevalence of anemia and the proportion responsive to iron are based on nationally representative and published data. In the SEAR, the prevalence of anemia in children aged 6-59 months was 53.8% with 96.7 million affected children. Among pregnant women, 48.7% were anemic with severe anemia affecting 1.1%, while 41.5% of nonpregnant women had anemia, with 1.9% of women having severe anemia, affecting a total of 202.0 million anemic women childbearing age (WRA). Data from the WRA is also the basis for monitoring progress towards achieving the 27th Global Nutrition Target. Anemia affects health, survival, productivity, income, and development. Iron deficiency with or without

anemia impairs cognitive development, limits attention span and shortens memory capacity, results in poor student performance, high absenteeism, and early dropout rates among school children. Iron deficiency can cause up to a 30% reduction in physical work capacity and performance and losses of up to 8% of Gross Domestic Product (GDP). Iron deficiency anemia is one of the top 10 causes of lost years of disability in low and middle-income countries, while anemia is the 7th leading cause of loss of disability in women. WHO estimates that 12.8% of maternal deaths in Asia can be attributed to Anemia (WHO, 2016).

While there has been little improvement in the anemia status of women and children in Southeast Asia, many policy and program gaps limit the effectiveness of current anemia interventions. The inability to see anemia makes it difficult to focus the attention of policymakers and uncertainty about the application of current definitions of anemia, and the proportion of anemia responsive to iron supplementation adds to the problem. Resistance to supplementation programs in anemia, although often caused by inadequate coverage, prevented program planners and implementers from scaling up interventions. The need for a multifactorial solution beyond health further complicates matters. Only a few countries have comprehensive programs that have achieved sufficient coverage and if the current status continues, global nutrition targets on anemia may not be achieved (WHO,2015).

Evidence suggests that reducing the prevalence of anemia between 2012 and 2025 is considered feasible, if there is significant government commitment, as demonstrated by achievements in several countries. The prevalence of anemia among women of reproductive age has decreased, in China, from 50.0% to 19.9% in 19 years; in Nepal, from 65% to 34% in 8 years; in Sri Lanka, from 59.8% to 31.9% in 13 years; in Bhutan from 54.8 to 31.1% in 12 years, and in Vietnam, from 40.0% to 24.3% in 14 years. Decisive and effective action is needed to reduce iron deficiency and anemia in women of childbearing age. Reducing anemia rates in children is also important, given the supposed impact on cognitive function and work capacity (WHO,2011).

The 2016-2025 Decade of Action for Nutrition, endorsed by all Member States at the UN General Assembly, provides a unique opportunity to accelerate efforts to reduce anemia through reviewing and scaling up direct and indirect interventions to reduce anemia. Behavior change interventions can be carried out through communication, information, and education (IEC). This behavior change intervention is expected to change people's knowledge and attitudes so that pregnant women can increase their consumption of high-protein foods and

consumption of Fe tablets. The participation of mothers and families in supporting the health of pregnant women can improve the health of pregnant women, including overcoming anemia in pregnant women (WHO,2015).

METHOD

This type of research is a Quasi-experiment with a pre-test-post-test design without a control group design. The research design in this study was an experiment using a nutrition booklet for cesarean mothers who were given while being treated and then saw the effect on Haemoglobin and perceptions. Management actions as participatory carried out by the mother after being admitted to the hospital were taken by a deep interview. The model used in this study was the enhanced recovery after surgery model: a consensus review.

The research was conducted at PKU Muhammadiyah Hospital Yogyakarta city and Kharisma Kulonprogo Hospital Yogyakarta. The study was conducted from May to November 2020. The population in this study were all pregnant women who were hospitalized, while the sample was cesarean mothers who met the inclusion criteria, minimal sample size taken by formula from Lameshow, S. et al (1997). The sample size was sought by numerical analysis in pairs with the number of respondents as many as 38 respondents. The sampling technique was carried out by accidental sampling, with inclusion criteria: 18 to 45 years of age, patients with cesarean, ASA status I and II. The exclusion criteria in this study were patients with emergency surgery and Hemorragie post-partum case. Respondents involved in the interview about the participation of as many as 28 subjects.

Data were collected using a questionnaire form for perception and interview guidelines for the management of respondents given before and after surgery, while hemoglobin levels were taken from secondary data for pre-surgery, and laboratory examinations for post-data. Data processing using computers then after analysis using the dependent t-test with a confidence level of 95% ($\alpha = 0.05$). Data collection used research instruments consisting of the respondent's consent sheet, identity sheet, and patient response. Data is collected every day until the desired number of subjects is sufficient. Statistical test using paired t-test with CI 95%. Qualitative data analysis using the Colaizzi and triangulation method. Subject's perception data was taken through a questionnaire and confirmed by interview, while the data on the participation of the subjects were obtained through in-deep interviews.

RESULTS AND DISCUSSION

Respondents who took part in the study 76.6% were at the ideal age for pregnancy and childbirth, namely at the age of 20 to 35 years, but there were still 23.7% who were over 35 years of age who were at high risk for pregnancy and childbirth. Most of the education level (57.0%) was at the secondary education level, but there were still 10.5% with low education. As many as 60.5% of mothers have jobs and earn a living. Most of the respondents (39.5%) were pregnant with their second child and 36.8% were their first pregnancies. The highest number of children owned by respondents was 2 children (42.1%).

76.6% of respondents who participated in the study were at the ideal age for pregnancy and childbirth, namely at the age of 20 to 35 years, but there were still 23.7% who were over 35 years of age who were at high risk for pregnancy and childbirth. Most of the education level (57.0%) was at the secondary education level, but there were still 10.5% with low education. As many as 60.5% of mothers have jobs and earn a living. Most of the respondents in this study (39.5%) were pregnant with their second child and 36.8% were their first pregnancies. Physiological factors of maternal age during pregnancy will affect the physical readiness of the mother and susceptibility to anemia, according to research by Amini.,the age factor less than 20 years and more than 35 years can increase the incidence of anemia in pregnant women (Amini et al., 2018).

Table 1. Maternal Haemoglobin (Hb) Levels Before Surgery (n = 38)

Category	n	%	Min (g/dL)	Max (g/dL)	Mean (g/dL)
Anemia	8	21.1	9	17.2	11.8
Not anemia	30	78.9			

Before surgery, the highest maternal Hb level, 17.2 g / dL, the lowest 9 g / dL, an average of 11.8 g / Dl, and 21.1% of mothers were still anemic.

Table 2. Maternal Hemoglobin (Hb) Levels After Surgery (n=38)

Category	N	%	Min (g/dL)	Max (g/dL)	Mean (g/dL)
Anemia	15	39.5	8	13.9	11.12
Not anemia	23	60.5			

After the Cesarean section surgery at the time of the control, the mother's Hb was examined with the highest Hb results in 13.9 g / dL, the lowest Hb 8 g / dL, and the average maternal Hb at 11.2g / dL. Compared to before and after surgery, there was a decrease in the average delta of maternal Hb by 0.615 g / dL. Cesarean surgery is an operation incurring the moderate risk of bleeding, and rates are rising globally (Ferguson,MT et all,2018)

Table 3. Respondents' Perceptions of Anemia

Respondent Perception	Pretest (n=38)				Post-test (n=28)			
	Good		Not Good		Good		Not Good	
	n	%	n	%	n	%	n	%
Definition of Anemia	32	84.21	6	15.79	28	100.00	0	0.00
Sign and Symptom of Anemia	21	55.26	17	44.74	28	100.00	0	0.00
Causes of Anemia	16	42.11	22	57.89	25	89.29	3	10.71
Impact of Anemia	16	42.11	22	57.89	25	89.29	3	10.71
Anemia Prevention	30	78.95	8	21.05	28	100.00	0	0.00
Protein Consumption	32	84.21	6	15.79	28	100.00	0	0.00
Good Drinks	9	23.68	29	76.32	28	100.00	0	0.00
Fluid Requirement	29	76.32	9	23.68	25	89,29	3	10,71
Good Nutrition	30	78.95	8	21.05	28	100.00	0	0.00
Protein Source	25	65.79	13	34.21	27	96.43	1	3.57
Types of Food for Healing	31	81.58	7	18.42	27	96.43	1	3.57
Average		64,83		35,17		96,43		3,57

Respondents' perceptions about the definition of anemia based on the pre-test results can be seen in the good category amounting to 84.21% and less good in the amount of 15.79%. Based on the post-test results, all of them are in a good category (100%). There is an increase in the understanding of mothers regarding the meaning of anemia. Respondents' perception of

signs and symptoms of anemia based on the pre-test results can be seen in the good category of 55.26% and 44.74% unfavorable. Based on the results of the post-test all in the good category amounted to 100%. There is an increased understanding of mothers regarding the signs and symptoms of anemia. Respondents' perceptions about the causes of anemia based on the pre-test results can be seen in the good category of 42.11% and 57.89% unfavorable. Based on the results of the post-test, all in the good category amounted to 89.29% and less good at 10.71%. There is an increase in the understanding of mothers regarding the causes of anemia.

Respondents' perceptions about the impact of anemia based on the pre-test results can be seen in the good category of 42.11% and 57.89% unfavorable. Based on the results of the post-test, the good category was 89.29% and the bad category was 10.71%. There is an increase in the understanding of mothers regarding the impact of anemia. Respondents' perceptions about anemia prevention based on the pre-test results can be seen in the good category of 78.95% and 21.05% unfavorable. Based on the results of the post-test, it can be seen that all of them are in a good category (100%). There is an increase in maternal understanding regarding the prevention of anemia. The perception of respondents about protein consumption based on the pre-test results can be seen that most of them are in a good category, namely 84.21% and less good at 15.79%. The socio-economic context of their lives and the structure and practices of the local health system are equally important factors in perception during pregnancy (Atkinson SJ, Farias MF, 1995)

Based on the results of the post-test, it can be seen that all of them are in a good category (100%). There is an increase in maternal protein consumption. Respondents' perceptions about the right type of drink based on the pre-test results can be seen in the good category of 23.68% and not good by 76.32%. Based on the post-test results, all are in a good category (100%). There is an increase in the perception of mothers in choosing the right type of drink. Respondents' perceptions about the need for fluids based on the pre-test results can be seen that most of them are in a good category, namely 76.23% and less good at 23.68%. Based on the results of the post-test, it can be seen that in the good category a number is 89.29% and less good in the amount of 10.71%. There is an increased understanding of mothers regarding fluid needs.

The perception of respondents about the right type of nutrition based on the pre-test results can be seen that most of them are in a good category, namely 78.95% and 21.05% less good. Based on the results of the post-test, it can be seen that all of them are in a good category

(100%). There is an increasing understanding of mothers in choosing the right type of nutrition. According to the pre-test results, respondents' perceptions about protein sources to overcome anemia were in a good category, namely 65.79% and 34.21% less good. Based on the results of the post-test, it can be seen that the good category is 96.43% and the less good is 3.57%. There is an increasing understanding of mothers regarding the types of protein sources. Respondents' perceptions of appropriate protein sources based on the pre-test results can be seen that most of them are in a good category, namely 81.58% and 18.42% unfavorable. Based on the results of the post-test, it can be seen that the good category is 96.43% and the less good is 3.57%. There is an increasing understanding of mothers regarding the types of food for post-SC treatment. As an effort to avoid caesarean section during birth, several women tended to perform potentially harmful practices in order to give birth to a small size newborn; such as avoiding nutritious food and eating less in pregnancy (Nisha MK, Raynes-Greenow C, Rahman A, Alam A,2019)

Table 4. Management of anemia that has been done by respondents

Management	Pre SC (n=38) Good		Post SC (n=28) Not Good		Pre SC (n=38) Good		Post SC (n=28) Not Good	
	n	%	n	%	n	%	n	%
Fe Tablet Consumption	21	55.26	17	44.74	27	96.43	1	3.57
Type of Drink	31	81.58	7	18.42	25	89.29	3	10.71
Snack Consumption	37	97.37	1	2.63	28	100,00	0	0,00
Total consumption of protein	25	65,79	13	34,21	24	85.71	4	14.29
Full Menu Consumption	30	78.95	8	21.05	25	89.29	3	10.71
Milk Consumption	15	39.47	23	60.53	15	53.57	13	46.43
Drink After Meal Time	37	97.37	1	2.63	28	100.00	0	0.00
Health Examination	32	84.21	6	15.79	21	75.00	7	25.00
Multivitamin Consumption	29	76.32	9	23.68	20	71.43	8	28.57
Personal and environmental hygiene	37	97.37	1	2.63	28	100.00	0	0.00
Percentage average		77.37		22,63		86,07		13,93

Management of Fe tablet consumption in respondents based on the pre-test results can be seen in the good category of 55.26% and 44.74% not good. Based on the results of the post-

test the good category amounted to 96.43% and was not good in the amount of 3.57%. There is an increase in the consumption of Fe tablets. Management of drinking water consumption in respondents based on the pre-test results was found to be in the good category of 81.58% and 18.42% of the bad. Based on the results of the post-test, the good category was 89.29% and the bad category was 10.71%. There is an increase in drinking water consumption. Management of the consumption of snack food for respondents based on the pre-test results can be seen that most of them are in the good category of 97.37% and 2.63%. Based on the post-test results, all of them are in a good category (100%). There is an increase in the consumption of snacks outside of mealtimes. Management of side dishes consumption based on the pre-test results can be seen in the good category of 65.79% and 34.21% not good. Based on the results of the post-test in the good category some 85.71% and 14.29% were not good. There is an increase in protein consumption.

Management of complete menu consumption for respondents based on the pre-test results can be seen in the good category of 78.95% and 21.05% not good. Based on the results of the post-test, the good category was 89.29% and the bad category was 10.71%. There is an increase in protein consumption. Management of milk consumption in respondents based on the pre-test results can be seen in the good category of 39.47% and 60.53% of the bad. Based on the post-test results in the good category some 53.57% and 46.43% are not good. There is an increase in milk consumption. Management of drinking water consumption after mealtime in respondents based on the pre-test results can be seen in the good category of 97.37% and not good by 2.63%. Based on the results of the post-test, it can be seen that all of them are in a good category (100%). There is an increase in drinking water consumption after meals.

Based on the results of the post-test, it can be seen that in the good category some 53.57% and 46.43% are not good. There is an increase in drinking water consumption along with meal times. Management of health checks on respondents based on the pre-test results can be seen in the good category of 84.21% and 15.79% of the bad. There has been a decrease in carrying out health checks. Management of multivitamin consumption in respondents based on the pre-test results can be seen in the good category of 76.32% and 23.68% not good. Based on the post-test results in the good category some were 71.43% and 28.57% not good. Management of personal and environmental hygiene on the respondents based on the pre-test results can be seen in the good category in the amount of 97.37% and the bad in the amount of 2.63%. Based on the post-test results, all are in a good category (100%). There is an increase in personal hygiene and maternal environment.

The research results showed a significant relationship between gestational age, iron tablet supplementation, and consumption (protein, fat, vitamin C, and iron) on anemia status in pregnant women10. According to WHO, a low Body Mass Index and short stature are found in many low-income countries that cause poor fetal development, an increased risk of complications in pregnancy, and an increased need for complicated delivery. Maternal anemia is associated with low birth weight (LBW) and an increased risk of maternal death. Each year an estimated 13 million children are born with stunted intrauterine growth and about 20 million with low birth weight. A child born with LBW has a greater risk of morbidity and mortality and is also more likely to develop non-communicable diseases, such as diabetes and hypertension, later in life (WHO,2015).

In this study, respondents who could be followed from before doing surgery until after doing surgery, going home, and returning to the hospital were only 28 respondents in total, so for the normality test the researcher used Shapiro Wilk with the results according to table 5 below:

Table 5 Normality Test of Hemoglobin Data

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
HbPre	.095	28	.200[*]	.971	28	.595
HbPost	.090	28	.200[*]	.978	28	.803

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

The results of the Sapiro-Wilk test showed that the significance value of pre Hb was 0.595 and Hb post was 0.803. The data is normally distributed with p> 0.05 so that the analysis is continued with the Paired sample T-Test with the results shown in table 6 as follows:

Table 6. Results of the Hemoglobin Correlation Test with Pair T Test

	Mean	N	Std. Deviation	Std. Error Mean	Correlation	Sig.
HbPre	11.8607	28	1.19174	.22522		
HbPost	11.3571	28	1.18616	.22416		
Hb Pre & Hb Post					.333	.084

The average Hb value *pre-test* or before being given the booklet was 11.86 gr / dL and the average Hb post or after being given the booklet was 11.35 gr / dL where there was a decrease in the average Hb level of the mother after giving birth with SC of 0.51gr / dL. The results of the correlation test between Hb before giving the booklet and according to the provision of booklets with a correlation coefficient value of 0.333 with a significance of 0.84 (> 0.05), it can be concluded that there is no relationship between the provision of booklets and the Hb levels of post-cesarean mothers.

Table 7. Paired Sample T Test Results of Hemoglobin Levels

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Hb Pre & Hb Post	.50357	1.37342	.25955	-.02899	1.03613	1.940	27	.063

The results of the Paired sample Test showed that the p-value = 0.063 so that the p-value> 0.05, it can be concluded that there is no communication relationship using the booklet to the hemoglobin level in the mother. The research with 40 respondents of postpartum mothers as the sample, found that the factors that have a meaningful relationship with the incidence of postpartum anemia, namely pregnancy anemia, age, parity, type of delivery, birth weight of the baby. The factors most at risk are anemia of pregnancy and type of delivery, birth weight of the baby(Azra PA,Rosha BC,2015).

Severe postpartum anemia was strongly associated with a predelivery Hb level between 10 and 10.9 g/dL, predelivery Hb level of less than 10 g/dL (Butwick AJ,2016). Bleeding that occurs during childbirth and postpartum has the potential to cause Post-Partum anemia. Research shows that women who give birth with CS are very susceptible to postpartum anemia because the incidence of postpartum hemorrhage is greater in CS delivery than vaginal delivery12. Other studies have shown that CS causes postpartum anemia with a percentage of 58.2% and vaginal delivery with a percentage of 37.2% (Garrido,C.et all,2017).

During pregnancy, hypervolemia and hemodilution stimulate fluctuations in the physiology of hemoglobin concentration, then there is a decrease in hemodilution in hemoglobin during labor and postpartum. So that in women who do not experience iron

deficiency, single pregnancies, the amount of blood loss during childbirth is ≤300 ml, do not experience a deficiency in hemoglobin levels, even tend to increase. This situation can be influenced by hemodynamic adaptations before and after delivery, which causes an increase in hemoglobin levels, which can compensate for blood loss during labor which tends to lower hemoglobin levels.

Hypervolemia during pregnancy will result in a loss of 30% of blood volume during delivery, and will slightly change the hematocrit rate in the postpartum period. After delivery, there was a reduction in hypervolemia through increased diuresis outcome with a weight loss of ± 3 kg in the first postpartum week. The risks of complications that can occur in caesarean delivery include infection, pain in the incision area, the risk of thrombosis, bleeding, and lactation disorders. Complications that can occur in the caesarean section include complications from anesthesia (10% of all maternal mortality). Complications that occur during caesarean action, more than 11% are caused, among others: bladder injury, uterine injury, blood vessel injury, intestinal injury, and can also occur to the fetus, amniotic fluid embolism. Postoperative complications are infections, can include infections of the uterus/endometritis, urinary tract, intestines, and caesarean incisions and thromboembolic events.

Data normality test for maternal perception variables about anemia used Shapiro Wilk with the results as shown in table 8 below:

Table 8. Normality Test of Mother's PerceptionData

	Kolmogorov-Smirnov[a]			Shapiro-Wilk			Z	Asymp. Sig. (2-tailed)
	Statistic	df	Sig.	Statistic	df	Sig.		
Pre-perception	.229	28	.001	.930	28	.063	-4.508[b]	.000
Post-perception	.410	28	.000	.631	28	.000		

The results of the normality test obtained that the data were not normally distributed with p-value = 0,000 where p-value = <0.05 so that the statistical test used next was the non-parametric test for two paired samples, namely the Wilcoxon test. The results of statistical analysis using SPSS for the Wilcoxon test are shown in table 9 below:

Table 9. Maternal Perception Wilcoxon Test Results

		N	Mean Rank	Sum of Ranks	Z	Asymp. Sig. (2-tailed)
PersepsiPost - PersepsiPre	Negative Ranks	1a	2.00	2.00	-4.508b	.000
	Positive Ranks	26b	14.46	376.00		
	Ties	1c				
	Total	28				

a. PersepsiPost < PersepsiPre
b. PersepsiPost > PersepsiPre
c. PersepsiPost = PersepsiPre

The results of the Wilcoxon test found that there was one mother who experienced a decrease in perceptions of anemia and its management, there were 26 mothers who experienced an increase in perception, and one person with the same perception before understanding the nutrition booklet for preventing anemia in post-SC mothers. Hypothesis test results obtained p 0.000 smaller than 0.05, so it can be concluded that there is an effect of the nutrition booklet on maternal perceptions.

Management variables or actions were taken by the mother to prevent and treat anemia before statistical analysis was tested for normality of data using Shapiro Wilk with the results in table 10.

Table 10. Results of Normality Test of Anemia Management Data in Mothers

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pre-implementation	.184	28	.016	.922	28	.039
Post-implementation	.244	28	.000	.831	28	.000

a. Lillie fors Significance Correction

The results of the data normality test using the Shapiro Wilk showed that the data were not normally distributed with p 0.000 <0.05 so that the non-parametric test was continued for two paired samples, namely the Wilcoxon test. The results of statistical analysis using SPSS for the Wilcoxon test are shown in table 11 below:

Table 11. Wilcoxon Test Results for Anemia Management in Mothers

		N	Mean Rank	Sum of Ranks	Z	Asymp. Sig. (2-tailed
Post Implementation Pre Implementation	Negative Ranks	5[a]	8.00	40.00	-2.839[b]	.005
	Positive Ranks	17[b]	12.53	213.00		
	Ties	6[c]				
	Total	28				

a. Post implementation < Pre implementation
b. Post implementation > Pre Implemantation
c. Post implementation = Pre Implementation

The results of statistical analysis showed that five mothers experienced a decrease in their implementation actions after being given a booklet, 17 mothers experienced an increase in management and there were 6 mothers whose actions were the same both before and before giving the booklet. The results of statistical tests obtained p-value = 0.005 <0.05, so it can be concluded that there is an effect of providing nutrition booklets on maternal management measures to prevent anemia. In this study, the results showed that there was an increase in maternal perceptions about anemia after providing communication through booklet media by 31.6%, there was an effect of booklet media with an increase in maternal perceptions of anemia (p-value <0.05).

The results of interviews with respondents found that after receiving information through nutrition booklets, mothers' perceptions improved the most in terms of understanding anemia, recognizing signs and symptoms of anemia, preventing anemia, consuming protein, types of drinks, and good nutrition for anemia management. After giving anemia management communication through booklets, there was an increase in the mother's participation in consuming snacks, drinking after mealtime, and improving personal and environmental hygiene.

This study aims to provide an overview of the perceptions of pregnant and post-partum women (42 days after delivery) about anemia and giving blood supplement tablets during pregnancy in Lebak and Purwakarta Regencies. The method used was a qualitative study in Lebak and Purwakarta Regencies in March 2012. The information analyzed was sourced from

24 in-depth interviews (WM) and six focus group discussions (DKT), involving 46 pregnant women and 17 postpartum mothers. Content and thematic analysis were carried out by identifying themes that emerged from the WM and FGD results; Results: Although the mothers' knowledge of the causes and ways of overcoming anemia in the two study areas was quite good, the wrong perception of equating anemia with low blood pressure was still common. Midwives had given an explanation of the added blood tablet, however, information regarding the side effects of the blood supplemented tablet was still considered insufficient (Sumarna, Nursanti, I. & Mawarti, R,2016).

Some of the driving factors for taking the supplemented blood tablet include the knowledge of the mother about the supplemented blood tablet, the benefits felt after taking the supplemented blood tablet, recommendations from health professionals, and encouragement from family members. Some of the inhibiting factors mentioned included the side effects of taking blood-supplemented tablets, misconceptions about the benefits of taking blood-supplemented tablets, and difficult access to blood-supplemented tablets. Women of childbearing age should be provided nutritional education regarding food sources of iron, especially prior to becoming pregnant, and taught how food choices can either enhance or interfere with iron absorption (Baig-Ansari N,2008)

Anemia if not handled properly can cause complications. One of the factors causing post-cesarean mothers wound infection is anemia which occurs due to the dilution of blood in the body and a deficiency of iron to form red blood cells which cause a decrease in oxygen. anemia due to blood loss during postpartum. During postpartum, the minimum hemoglobin level is 10 g / dl. If the hemoglobin level is less than this amount or it can be said to be anemia (Proverawati and Asfuah, 2009).

CONCLUSION

There was an increase in the mother's perception of anemia which was in the good category from 64.83 to 96.43. Management of anemia in mothers increased from an average of 77.37% to 86.07%. There is a significant effect of providing nutrition booklets on increasing maternal perceptions about anemia with p-value = 0.000. There is a significant effect of providing nutrition booklets on improving the management of pre

vention of anemia in mothers with p-value = 0.005. There is no influence of communication through the provision of booklets on the hemoglobin level of post-cesarean mothers with a p-value = 0.063. Communication through the booklet nutrition can increase the perception and

participation of mothers in terms of consuming snacks, drinking after mealtimes as well as personal and environmental hygiene.

SUGGESTED

Health care for pregnant women, such as hospitals, health centers, midwives for independent practice and clinics, provide communication media in the form of nutrition booklets to prevent anemia in pregnant women, which are given to mothers from the beginning of pregnancy. Health workers provide health education about the prevention and management of anemia in pregnant women. It is better if pregnant women have regular hemoglobin checks to prevent anemia.

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Communication Trough Nutrition Booklet Increases Perception and Partisipation