

## **Influence Individual Nutrition Counseling with Booklet Media on Hb Levels of Pregnant Women in the Wedi Regency Health Center Area Klaten**

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### **ABSTRACT**

**Background** Incident maternal anemia in Indonesia is a consequence deficiency iron Still figure 48.9% (Risksedas, 2018). Anemia is circumstances No sufficient erythrocytes For deliver need oxygen marked network with low Hb concentration <11gr/dl (Wibowo et al., 2021). Causative factor incident that's one of them is pattern consumption food Mother pregnant who is not various.

**Subjects and methods** : Type of research used is *quasi experiment* with design *Pre-post Control Design* and data is collected with use questionnaire with amount sample as many as 60 mothers pregnant . Taking sample in study This will use *purposive sampling*. Data analysis used *the Paired T- Test* for paired and *Unpaired T-Test* for those who don't pair.

**Results** : There is influence significant in a way statistics counseling nutrition individual with booklet media enhancement Hb levels of pregnant women with p value < 0.05 (0.000), in group intervention, the average increase in Hb was more than 0.50 gr/dl big from group control 0.20 gr/dl.

**Keywords:**

anemia, pregnant women, counseling nutrition, Hb levels

## 1. INTRODUCTION

Pregnancy period is the time when the body really needs it intake eat the maximum good for Mother nor the fetus she is carrying. Pregnant women usually experience a number of complaint like often tired, chief dizziness, shortness of breath breath, face pale, and various type complaint other. If Huan the No handled with good so can result occurrence of anemia during pregnancy anemia in the mother pregnant can happen consequence low internal hemoglobin content body during pregnant (Irwanti & Rohmawati, 2019)

*World Health Organization ( WHO )* on year 2012 report that prevalence anemia on Mother pregnant in world range average 14%, in country industry 56% And in country develop between 35%-75%. Results Survey Basic Health Research ( Riskesdas ) in 2018 is known that prevalence of anemia nutrition iron on Mother pregnant increase of 48.9% compared 2013 that is by 37%. Quite an improvement significant that is by 11%, p This majority experienced by the mother pregnant with age between 15-24 years experienced the incidence of anemia is 85%, Prevalence Anemic mother in Central Java is 57.1% and anemia is most common in mothers pregnant with TM III(Riskesdas, 2018)

Anemia affects almost two thirds woman pregnancy in developing countries and contributes to mortality mother and fetus. Pregnancy results with anemia is retardation growth intrauterine (IUGR), birth prematurity, birth weight low, increase risk neonate deaths (Alim et al., 2019). Anemia is also related with intake nutrition Mother before happen pregnancy and after happen pregnancy, nutrition can influenced by existence factor direct that is disease infections and intake food and factors No direct covers supply food family, education and knowledge mother, income, sanitation environment and service health. Research result from (Noviyanti et al., 2019) show that intake Eat Which not enough moment pregnancy will cause intake proteins And vitamin No in accordance with need, metabolism No balanced so that Hb formation is inhibited and needs body will substance nutrition Good micro nor macro No fulfilled, so will resulting in emergence various problem nutrition and current anemia pregnancy.

Consumption food Mother pregnant must fulfil need for herself and for growth as well as development fetus / baby. Therefore that, mother pregnant need substance more nutrition Lots compared to with circumstances no pregnant, with consumption the food still diverse and balanced in amount and proportion. (Aryuti Nirmala et al., 2023). During pregnant, mother must add quantity and type food eaten for sufficient need nutrition Mother pregnant woman and her fetus (Ernawati et al., 2017). Good food consumed for increase hemoglobin levels are food with content substance high iron that is heme found in meat and non-heme found in vegetables. Fulfillment nutrition balanced during pregnancy beneficial for overcome problem nutrition like lack nutrition. Based on guidelines nutrition balance, needs nutrition Mother pregnant improved that is substance nutrition macro and substances nutrition micro. Based on research conducted by (Katmini & Yunita, 2020) was obtained pattern consumption food that doesn't various increase risk of anemia in Mother pregnant of 3.98 times more big compared to mother who consumes it diverse food . Pregnant mother with eating anemia foods that contain any protein day , Hb level increased 2.31 times compared mothers who don't Eat foods that contain protein (Vernissa et al., 2017)

Education is part activity education health. Health education defined as a learning process to individuals, families, groups and communities are carried out with objective for change behavior that is not Healthy to more patterns Healthy. Educational process health involve a number of components, including using learning strategies teach, defend decision For make change action / behavior, and education health is also a focus to change behavior For improve health status them (Wakwoya et al., 2023). Health education provided by staff health will give rise to awareness in consume supplementation substance iron To use lower cases of anemia Based on results research conducted by obtained that education low <high school has

risk anemia occurs in the mother pregnant amounting to 5.76 times more big compared to educated mother high > high school (Bekele et al., 2016)

Selected booklet media as an educational medium health Because capable spread information in relatively short time, so can increase knowledge Mother pregnant. Mother with knowledge good nutrition possibility will give adequate nutrition For him self. If a Mother own good knowledge so Mother the will try For fulfil need the nutrition. Knowledge Mother pregnant about nutrition will influence in taking decision and also will influence on behavior mother (Listyarini et al., 2020).

Intervention education and counseling nutrition is a frequent strategy used for repair pattern eat with mother pregnant. Intervention education targeted nutrition population Mother deficiency pregnancy nutrition aim For repair lack energy and micronutrients , good through use supplement micronutrients and fortification (Kulsum & Ayu Wulandari, 2022). Intervention counseling and education pattern Eat This influence choice and availability food Healthy House stairs in the middle challenge tough economy . We take notes that target factor socio-ecological including effort direct going to motivation For learn and change as well as support from member family direct create enabling environment happen change pattern eating in the family (Katenga-Kaunda et al., 2022). Giving education nutrition individual through videos and leaflets in contact significant with enhancement knowledge nutrition, attitude, score practice, compliance IFA intake and Hb levels. We also recommend study more carry on for evaluate influence education nutrition since the first trimester pregnancy and compare them with pregnancy outcomes (Ramachandran et al., 2023)

Based on background behind above, author interested For study more in influence counseling nutrition individual with booklet media increase in Hb of Pregnant Women at Wedi Community Health Center, Regency Klaten.

## **2. METHOD**

Type of research used in study This is a Quasi Experimental Design with design Pre-Post Control Design research. On research This shared into two groups that is group treatment and group control, where influence treatment determined with compare change values variable results in the group treatment with change values in the group control (Murti, 2016).

There are two groups treatment, in groups intervention done measurement of Hb levels before and after given treatment that is giving Nutrition counseling using booklet media. In groups control is also carried out measurement with the same time with group intervention but No given intervention whatever, just done counseling lecture just.

Study This carried out in the work area Wedi District Health Center Klaten which was held from March to by June 2024. Population source in study This is Mother pregnant women in 19 villages in the work area Wedi Health Center, collection sample chosen in a way in a way *purposive random sampling* as many as 60 subjects research, with 30 subjects as controls and 30 subjects as group intervention (Murti, 2013)

Variable dependent in study This is Hb levels in the mother pregnant. Independent variable in study This is counseling nutrition individual with booklet media. Mother's Hb level pregnant is Addition mother's Hb level pregnant One month before and after intervention. Counseling nutrition individual is an interaction process between counselor with pregnant women TM I and II who discussed about recommendation meni nutrition balanced Mother pregnant with use the booklet and do it twice in a month. Instrument research used For data collection is booklet media, and for checking Hb levels using Hb stick .

Data analysis in research This use Analysis univariate For get distribution frequency. Analysis Bivariate For analyze connection between variable independent and

dependent use the *paired test T -Test* and calculations *Unpaired T-Test* for those who don't pair , level significance  $p < 0.05$ .

Research ethics This covers agreement become subject research (*informed consent*), without Name (*anonymity*) , *confidentiality* , and consent ethics (*ethical clearance*) . *Ethical clearance* has been done conducted at Kusuma Husada University with number : 2196/UKH.L.02/EC/VI/2024 published June 5, 2024.

### 3. RESULTS

#### 3.1 Analysis Univariate

Analysis univariate done with count distribution frequency , central tendency and data variation . Data used is results checking Hb pre, post and increase Hb levels are described in table 1

Table 1. Distribution Frequency of Pre- Group Hb Checking Intervention

No	Hb level (gr/dl)	f	%
1	10.60	1	3.3
2	10.70	2	6.7
3	10.80	3	10.0
4	10.90	2	6.7
5	11.00	1	3.3
6	11.30	1	3.3
7	11.60	3	10.0
8	11.70	2	6.7
9	11.80	1	3.3
10	11.90	1	3.3
11	12.00	3	10.0
12	12.10	2	6.7
13	12.20	2	6.7
14	12.30	1	3.3
15	12.50	2	6.7
16	12.70	1	3.3
17	12.80	1	3.3
18	13.00	1	3.3

Table.1 shows that results of pre -checking Hb in the group intervention there is Mother pregnant with Hb 10.8 gr/dl, 11.8 gr/dl, and 12 gr/dl for 3 people each, mother pregnant with a minimum Hb of 10.6 gr/dl and a maximum Hb of 13 gr/dl.

Table 2. Distribution Post Frequency of Group Hb Checking Intervention

No	Hb level (gr/dl)	f	%
1	11.20	1	3.3
2	11.30	2	6.7
3	11.40	2	6.7
4	11.50	3	10.0
5	11.60	1	3.3
6	11.80	1	3.3
7	12.00	1	3.3
8	12.20	2	6.7
9	12.30	2	6.7

10	12.40	4	13.3
11	12.50	3	10.0
12	12.60	1	3.3
13	12.70	1	3.3
14	12.80	1	3.3
15	13.00	2	6.7
16	13.30	1	3.3
17	13.50	2	6.7

Table 2 shows that is known post Hb checking results in the group intervention there is Mother pregnant with 11.5 gr/dl, and 12.5 gr/dl for 3 people each, mother pregnant with a minimum Hb of 11.2 gr/dl and a maximum Hb of 13.5 gr/dl.

Table 3 Distribution Frequency increase in group Hb Intervention

No	Hb level (gr/dl)	f	%
1	0.30	2	6.7
2	0.40	6	20.0
3	0.50	8	26.7
4	0.60	7	23.3
5	0.70	5	16.7
6	0.80	2	6.7

Table 3 shows that results increase in Hb in the group intervention there is Mother pregnant with increase in Hb 0.50 gr/ dl in 8 people, mother pregnant with The minimum increase in Hb is 0.30 gr/dl and the maximum Hb is 0.80 gr/dl.

Table 4. Central Tendency and Variations in Data from Group Hb Checking Results Interventions and Groups Control

Data Measurement	Intervention Group			Control Group			
	<i>Pre</i>	<i>Post</i>	Differ ence	<i>pre</i>	<i>Post</i>	Differ ence	
<i>Tendency Central</i>	Mean	11.6	12.2	0.5	11.7	11.9	0.2
	Median	11.7	12.3	0.5	11.8	12	0.3
	Mode	10.8	12.4	0.5	12.0	12	0.3
Data Variations	Standard Deviation	0.7	0.6	0.1	0.9	0.8	0.3
	Minimum Value	10.6	11.2	0.3	9.0	10.0	-0.5
	Maximum Value	13.0	13.5	0.8	14.0	14.0	1.0
	<i>Range</i>	2.4	2.3	0.5	5.0	4.0	1.5

Central tendency can seen from mean, median and temporary mode values data variations can be seen from mark standard deviation, and range ( subtraction mark maximum and minimum values ). Based on table above can is known that the average pre with Group Interventions and Groups Control almost The same namely 11.6 gr/dl and 11.7 gr/dl, while the average increase in Hb in the Intervention more tall i.e. 0.5 gr/dl compared with group control 0.2 gr/dl. Central tendency results in research This can seen in Table 4.

### 3.2 Prerequisite Test Analysis

On research This analysis bivariate used are Pair t-test and Unpair t-test which have precondition in statistics parametric i.e. data must be normally distributed . In research this is a normality test done with use *Shapiro wil k*. If value *Asymp . Sig* more big than 0.05 then the data is normally distributed. Normality test done with using SPSS 16.0 for windows with results as

Table 5. Data Normality Test Results of Group Hb Checking Intervention and Control

Hb results	N	p (Sig. 2-tailed)
<i>Pre</i> Intervention	30	0.104
<i>Post</i> Intervention	30	0.113
Enhancement Hb levels	30	0.115
<i>Pre</i> Control	30	0.475
<i>Post</i> Control	30	0.713
Improvement Hb rate	30	0.108

Based on table above can is known that pre, post results and pre-post increase in Hb checking in groups Interventions and Groups Control normally distributed. This matter can seen from mark *Asymp. Sig* on each data is more big of 0.05 which means all data is normally distributed.

### 3.3 Analysis Bivariate

Analysis bivariate aim For see difference results group weight weighing Interventions and Groups Control before and after intervention. Based on prerequisite tests analysis can is known that the data is normally distributed so that statistical tests are used is statistics parametric that is *paired t- test* and *unpaired t-test* Analysis results bivariate is as following:

Table 6 Paired t-test calculation of checking results Pre-post Hb levels. Administration Individual Nutrition Counseling with Booklets

Hb Level Results	Average	Standard Deviation	t	df	p
<i>Pre</i>	11.6	0.7			
<i>Post</i>	12.2	0.6	21.8	29	0,000
Increased Hb Levels	0.5	0.1			

Table 6 shows that criteria Paired t-test testing if p value <0.05 (0.000 <0.05), so can concluded that there is significant difference in a way statistics results checking Pregnant women's Hb levels before and after done intervention giving counseling nutrition individual with booklet media.

Table 7 Paired t-test calculation of checking results group pre-post Hb levels control

Hb Level Results	Average	Standard Deviation	t	df	p
<i>Pre</i>	11.7	0.9			
<i>Post</i>	11.9	0.8	-3.8	29	0.001
Increased Hb Levels	0.2	0.3			

Table 7 shows that criteria testing *Paired t-test* If p value <0.05 (0.001 <0.05), so can concluded that there is significant difference in a way statistics results checking mother's Hb level Pregnancy before and after in the group control .

Table 8 Differences Group Interventions and Groups Control On Increase Hb levels of pregnant women

Hb Level Results	Homogeneity of Variances		Unpaired t-test			
	F	Sig.	Average	t	df	Sig. (2-tailed)
Increased Hb Intervention	8.99	0.004	0.5	4.71	58	0.000
Increased Hb Control			0.2			

Table 8 shows that is known that p value = 0.000, . Criteria testing *Unpaired t-test* If p value <0.05, namely 0.000 <0.05, then Ha is accepted so that can concluded that there is significant difference between Group Interventions provided Individual Nutrition Counseling with booklet media results enhancement Hb levels in the mother pregnant.

#### 4. DISCUSSION

Knowledge possessed will influence in taking decision and also will influence on behavior Mother. Mother with knowledge good nutrition possibility will give adequate nutrition for the baby matter This more important Again if Mother entering a period of cravings, which is normal stomach reluctant entered food anything nutritious , because of the nausea you feel , in fact will choose food with a fresh and sour taste . Although in such conditions if a Mother own good knowledge so Mother the will try For fulfil need nutrition and also the baby's (Anita Dyah & Fatmawatia, 2020).Health education aim For increase attitude about health so that will easy happen behavior Healthy. Health education will increase knowledge Then attitudes and behavior Healthy. Health education influential to knowledge Mother pregnant about fulfillment pregnancy nutrition and attitude Mother pregnant about fulfillment mutation during pregnancy (Wulandari et al., 2023)

On research This stated that the average maternal Hb level pregnant before done counseling nutrition with booklet media in the group interventions and groups control are 11.6 gr/dl and 11.7 gr/dl. Results of checking Hb before intervention the show respondent's Hb level is relatively The same good in the group intervention or group control, so difference results after intervention in one group can called as influence from intervention (Individual Nutrition Counseling with booklet media). Difference results check Hb before and after in the group Interventions and Groups Control can seen from tables 6 and 7, in table 6 you can is known that  $p < 0.05$  ( $0.000 < 0.05$ ), while in table 7 it can be is known that  $p < 0.05$  ( $0.001 < 0.05$ ), so can concluded that good in the group Intervention nor group control there is difference before and after .

These results can happen due to the group Intervention nor group control during One month Babies also consume it food although the variety Can just different between group control and group case , so does mother pregnant take additional tablets blood , okay group control nor group intervention also took additional tablets blood , the difference in both group those in the group intervention done counseling in a way individual , mother pregnant given material about nutrition Mother pregnant , pattern consume additional tablets blood until you get to the menu you can cooked whereas For group control not only based knowledge of each mother .

Giving education nutrition and plans pattern Eat based substance -rich foods iron relate significant with enhancement hemoglobin levels, increase intake food and knowledge nutrition about anemia and foods rich in substances iron. Change score knowledge nutrition Mother about anemia and foods rich in substances iron tall in a way significant in the group intervention compared to controls [ $8.26 \pm 4.57$  vs  $1.05 \pm 6.59$ ,  $p < 0.05$ ] (Sunuwar et al., 2019)

Based on results statistical data analysis difference increase in maternal Hb pregnant. In groups Interventions provided counseling nutrition with booklet and group media Control to results An increase in the Hb of pregnant women was obtained that p value <0.05 ( $0.000 < 0.05$ ),

then  $H_a$  is accepted, and can be concluded that there is significant influence in a way statistics results enhancement mother's Hb level given pregnancy Intervention form counseling nutrition with booklet media with groups that don't given intervention,  $p$  This seen from the average increase in maternal Hb pregnant with group Intervention is 0.5 gr/dl whereas with Group Control is 0.2 gr/dl.

Research result This in line with study previously stated nutritional education use the booklet on the mother can increase knowledge Mother about nutrition. From the results analysis of the paired t test is known difference pre test and post test education nutrition using booklet media is  $p$  value =  $0.000 < \alpha 0.05$ . This matter showing that giving education nutrition in mothers with booklet method can repair level knowledge Mother as effort For prevention of anemia. Booklets have two advantages compared to with other media, namely can studied every moment Because designed in form book as well as load information more Lots. Selected booklet media as an educational medium health Because capable spread information in relatively short time, so can increase knowledge Mother pregnant (Anita Dyah & Fatmawatia, 2020)

Counseling nutrition with using booklet media is very important influential For increase knowledge and attitudes Mother pregnant in effort prevent anemia compared only give counseling nutrition just based on results study The independent t test results obtained showed a  $p$ -value  $< 0.05$  so can concluded There is significant influence (Mardiana et al., 2022). On research This can seen from the average increase in maternal Hb pregnant with group Intervention is 0.5 gr/dl whereas with Group Control is 0.2 gr/dl. This matter prove that counseling with influential booklet media in a way significant.

## 5. CONCLUSION

On research This can taken A conclusion that There is influence Individual Nutrition Counseling with booklet media Hb levels in the mother pregnant with average increase in the group intervention amounted to 0.50 gr/dl while in group control 0.20 gr/dl.

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