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THE EFFECT OF PROVIDING NUTRITIONAL COUNSELING ON THE LEVEL OF KNOWLEDGE, ATTITUDES, AND COMPLIANCE WITH FE TABLETS CONSUMPTION FOR PREGNANT WOMEN WITH ANEMIA IN THE GROGOL COMMUNITY HEALTH CENTER AREA

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ABSTRACT

Anemia contributes to maternal mortality during pregnancy, with a 2021 prevalence of 5.02% in Grogol. Non-compliance with Fe tablet consumption is a key factor. Nutritional counseling can effectively improve mothers' knowledge, attitudes, and compliance with Fe tablet intake. This study examines the impact of nutritional counseling on knowledge, attitudes, and compliance with Fe tablet consumption among anemic pregnant women at Grogol Community Health Center. Using a pre-experimental one-group pre-post-test design, 35 anemic pregnant women in their second and third trimesters were randomly sampled from clinic records. They received 15-20 minutes of counseling with leaflets. Knowledge and attitudes were assessed via interviews and questionnaires, while compliance was measured using the pill count formula. The Wilcoxon Signed Rank Test evaluated changes from baseline to post-counseling. Nutritional counseling increased knowledge (28.60%), attitudes (17.10%), and compliance (22.80%). Significant improvements were found in knowledge (p=0.001), attitude (p=0.001), and Fe tablet compliance (p=0.002). Nutritional counseling at the Grogol Community Health Center should be provided periodically to carry out promotive and preventive functions in the incidence of anemia in pregnant women.

Keywords: Anemic pregnant women, compliance, nutrition counseling, knowledge, attitude, fe tablets

INTRODUCTION

Nowadays, anemia during pregnancy is still a health problem which is a contributing factor to the high maternal mortality rate which is often referred to as "Potential Danger to Mother and Child". According to the World Health Organization (2017), the incidence of anemia in pregnant women in 2016 had a prevalence of around 40% globally, while in 2019 the global prevalence rate of anemia in pregnant women was around 36.5% (WHO, 2021). This shows that the incidence of anemia in pregnant women is still quite high worldwide. The results of Basic Health Research (Riskesdas) in 2018 showed that the 2018 prevalence rate of pregnant women with anemia in Indonesia was 48.9%. The rate experienced a quite high increase compared to that of 2013 with a prevalence of 37.1% (Ministry of Health of the Republic of Indonesia, 2018). The prevalence of anemia in pregnant women in 2021 in the Grogol Community Health Center area was 5.02% (Grogol Community Health Center, 2021).

Anemia that occurs during pregnancy can increase the risk of maternal and child death, the emergence of infectious diseases, premature birth of the baby, and disruption of the growth and development process of the fetus, either when the baby is still in the womb or after it is born (Ministry of Health of the Republic of Indonesia, 2021). One preventive measure to reduce the incidence of anemia in pregnant women that can be done is by administering red blood cell supplement tablets (TTD) during pregnancy in a minimum quantity of 90 TTD, where one tablet contains iron (ferrous fumarate which is equivalent to 60 mg of elemental iron) and 0.4 mg of folic acid (Ministry of Health of the Republic of Indonesia, 2021).

The prevalence of administering 90 TTD in the Grogol Community Health Center area in 2021 is 92.23%. This prevalence has met the target when it is compared with the achievement in Sukoharjo Regency, namely > 90%. However, several villages such as Telukan Village with a percentage of 88.76%, Parangjoro 70.71%, Pondok 78.37%,

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Langenharjo 68.41%, and Gedangan with a percentage of 87.70% still have a prevalence below 90% (unfulfilled) (Grogol Health Center, 2021). This shows that the provision of 90 Fe tablets for pregnant women in the Grogol Community Health Center area has not been carried out optimally because those villages have not reached the 90% target.

Nutritional counseling can be an effective way to increase maternal knowledge which is expected to have a positive influence on awareness and compliance with the consumption of Fe tablets in pregnant women so that anemia during pregnancy can be prevented and treated before delivery. Djati, et al (2017) stated that the occurrence of two-way communication in counseling between the counselor and the client means that mothers have more opportunities to ask questions so that the information they need is more precise and meets their needs. In addition, mothers' motivation can be strengthened through counseling causing an increase in compliance with the consumption of Fe tablets during pregnancy. Besides, individuals' inner perceptions can be more convincing in providing an action plan through counseling. According to the health belief model theory proposed by Strecher & Rosenstock (1997), the presence of good or bad perceptions originating from knowledge, experience, or information can provide confidence so that individuals are aware to view something. Knowledge plays an important role in determining the level of consumption of Fe tablets because it can influence the attitude of pregnant women. If pregnant women's knowledge is lacking, it can cause individuals' less optimal health behavior to prevent anemia (Shofiana, et al, 2018). Accordingly, counseling can be a strategy for changing social behavior and communication by influencing actions that can be observed and measured to improve health status (Juma et al, 2015).

Purbowati's (2016) research result in the working area of the Kedaung Wetan Community Health Center, Tangerang City, shows that there is an increase in compliance with the consumption of Fe tablets after providing nutritional counseling in the treatment group after the nutritional counseling process with a percentage of 89.7%. Research conducted by Djati, et al (2017) in the Sumpiuh Community Health Center II area also shows that there is an influence of nutritional counseling on the consumption of Fe tablets with a percentage of 76.2% in the treatment group after the treatment in the form of nutritional counseling.

Based on the preliminary survey, researchers interviewed 10 anemic pregnant women. The results showed that 70% of the respondents stated that they did not regularly consume Fe tablets and in one week only consumed Fe tablets < 3 times/ week. Then, 50% of the respondents stated that the reason for not routinely consuming them was that they felt they had only consumed the vitamins given by the obstetrician and ignored the Fe tablets from the health center. This shows that one of the factors causing anemia is that pregnant women are not compliant with consuming Fe tablets during pregnancy.

This study aimed to determine the effect of nutritional counseling on the level of knowledge, attitudes, and compliance with the consumption of Fe tablets among pregnant women with anemia in the Grogol Community Health Center area.

METHODS

This study utilized pre-experimental with a group pretest and posttest design in which there was no control group. This research was carried out in the working area of the Grogol Community Health Center, Grogol District, Sukoharjo Regency on 16 December 2022 - 28 February 2023. The population in this study were all pregnant women registered in the Grogol Community Health Center area in 2022 with inclusion criteria including pregnant women with trimester anemia II and III, pregnant women who lived in the research area for approximately 6 months, pregnant women who did not work as a health worker, pregnant women who received Fe tablets from the community health center, the distance between the current pregnancy and the previous pregnancy was > 2 years. The exclusion criteria included pregnant women who did not complete all questionnaires and did the post-test. The sample used in this research was 35 respondents. Sampling was carried out using a simple random sampling technique.

The independent variable in this research is the provision of nutritional counseling, while the

dependent variable in this research is the level of knowledge, attitude, and level of compliance with the consumption of Fe tablets. Data collection in this study was carried out through interviews and pre-post test questionnaires consisting of 20 statements regarding anemia and the importance of consuming Fe tablets for the level of knowledge and 28 statements regarding consuming Fe tablets for attitudes. The level of compliance was taken using the calculation method using the pill count formula and the use of a checklist instrument in the KIA book containing a table of Fe tablet consumption schedules. The level of knowledge was scored using the Guttman scale. If the answer is correct, the score is 1. If it is incorrect, the score is 0. The total score obtained was divided by the number of questions, then multiplied by 100 to obtain a result in the form of a percent value. The knowledge category can be said to be good if the respondents can answer 15-20 statements correctly. It is considered sufficient if they answer 8-14 statements correctly, and considered poor if they answer 0-7 statements correctly. Attitude scoring was done using a Likert scale with five answer categories. The score of positive statements (favorable) with the answer "Strongly Agree" is 5, "Agree" is 4, "Undecided" is 3, "Disagree" is 2, and "Strongly Disagree" is 1. The score for negative statements (unfavorable) with the answers "Strongly Agree" is 1, "Agree" is 2, "Undecided" is 3, "Disagree" is 4, and "Strongly Disagree" is 5. Attitude can be said to be positive if the respondents' T > T mean. It can be considered as a negative attitude if the respondents' T < T mean. Compliance level scoring was obtained using the pill count calculation formula, where the number of Fe tablets consumed was divided by the number of Fe tablets received, then multiplied by 100%. Consumption of Fe tablets can be said to be compliant if the percentage is 100% in one month, if <100% then it is said to be non-compliant.

The steps for conducting nutritional counseling are as follows: 1) Greeting and doing a self-introduction to the respondents; 2) explaining the purpose and benefits of nutritional counseling; 3) asking about the respondents' availability; 4) conveying the technical counseling which is carried out for 15-20 minutes; 5) explaining the material counseling using leaflets regarding the meaning of anemia, characteristics of anemia, causes of anemia during pregnancy, the impact of anemia, steps to prevent anemia, the meaning of Fe tablets, the importance of consuming Fe tablets during pregnancy, the ways to consume Fe tablets, kinds of food consumption to limit and avoid during pregnancy; 6) conducting a question and answer session with respondents regarding the respondents' eating habits, respondent complaints (reasons for non-compliance), how the respondent consumes Fe tablets, and repeating questions regarding counseling material; 7) expressing gratitude for the respondents' availability in attending counseling sessions.

In this study, univariate analysis consisted of maternal age, gestational age, educational background, employment, maternal anemia status, knowledge, attitudes, and compliance of pregnant mothers in consuming Fe tablets in the form of a frequency and percentage distribution table for each variable in the SPSS program. Analysis of the influence and differences in levels of knowledge, attitudes, and compliance to consuming Fe tablets at the beginning and the end using the Wilcoxon Signed Rank Test. Analysis of the relationship between variables used the Spearman Correlation Test. This research has received approval from the Health Research Ethics Commission (KEPK) Faculty of Medicine, Muhammadiyah University of Surakarta with ethical clearance No. 4744/B.1/KEPK-FKUMS/I/2023.

RESULTS AND DISCUSSION

Table 1 shows a description of the characteristics of the respondents. Regarding maternal age, the majority of respondents experienced pregnancy in the early adulthood category, namely 26-35 years (48.60%), 22 respondents (62.90%) were in the second trimester of their pregnancy, and 13 respondents (37.10%) were in the third trimester of their pregnancy. The majority of respondents had their highest education at high school or vocational school level (74.30%), did not work or were housewives (68.60%), and had mild levels of anemia, namely Hb levels in the range of 10-10.9 g/dl (74.30%).

Table 2 shows that there were differences in the level of knowledge, attitudes, and compliance

Table 1. Distribution of Characteristics of Pregnant Women with Anemia

Characteristic	n	%
Maternal age		
Late adolescents	12	34.30
Early adulthood	17	48.60
Late adulthood	6	17.10
Total	**35**	**100.00**
Gestational age		
Second trimester	22	62.90
Third trimester	13	37.10
Total	**35**	**100.00**
Educational background		
Elementary education (Elementary school [SD], Junior high school [SMP] graduate)	8	22.90
High school (Senior high school [SMA], Vocational high school [SMK])	26	74.30
Tertiary education (S1)	1	2.90
Total	**35**	**100.00**
Employment		
Housewives	24	68.60
Labor	3	8.60
Private employees	5	14.30
Self-employed	3	8.60
Total	**35**	**100.00**
Anemia status		
Mild anemia	26	74.30
Moderate anemia	7	20.00
Severe anemia	2	5.70
Total	**35**	**100.00**

Table 2. Description of Level of Knowledge, Attitudes, and Compliance with Fe Tablet Consumption

Variables	Nutritional counseling				Improvement levels (%)
	Before		After		
	n	%	n	%	
Level of Knowledge					
Good	19	54.30	29	82.90	28.60
Sufficient	15	42.90	6	17.10	
Poor	1	2.90	0	0.00	
Total	35	100	35	100	
Attitudes					
Positive	21	60.00	27	77.10	17.10
Negative	14	40.00	8	22.90	
Total	35	100	35	100	
Compliance					
Compliant	22	62.90	30	85.70	22.80
Non-compliant	13	37.10	5	14.30	
Total	35	100	35	100	

with the consumption of Fe tablets before and after the administration of nutritional counseling, with a significant percentage increase in the level of good knowledge of 28.60%; positive attitude of 17.10%; and compliance with Fe tablet consumption was 22.80%.

Table 3 indicates that the average results of correct answers chosen by respondents before the administration of nutritional counseling on indicators regarding anemia were <80%, while on indicators regarding consumption of Fe tablets >80%. After nutritional counseling administration, respondents experienced an increase in each indicator, where each indicator had an average of > 80%.

Table 4 shows that before the nutritional counseling process, the average respondents' answers, if rounded, had a score of 4 on the indicator of the importance of consuming Fe tablets and the side effects of consuming Fe tablets. The average respondents' answers on the indicator of how to consume Fe tablets and compliance with consuming Fe tablets if rounded had a score of 3. After the nutritional counseling process, the average respondents' answers to each indicator, if rounded, had a score of 4.

Table 5 shows the results of the bivariate analysis describing that $p < 0.05$ at the level of knowledge ($p = 0.001$); attitude ($p = 0.001$); and compliance with Fe tablet consumption (0.002), where these results indicated that there was an influence of providing counseling on the level of knowledge, attitudes, and compliance with Fe tablet consumption.

Table 6 shows that 23 respondents (65.72%) who had a good level of knowledge tended to have a positive attitude, while 6 other respondents (17.14%) had a negative attitude. A total of 4 respondents (11.43%) who had a sufficient level of knowledge also had a positive attitude, while the other 2 respondents (5.71%) had a negative attitude. Based on the results of the correlation analysis, the result was $p = 0.516$, meaning that the level of knowledge had no relationship or connection with the mothers' attitudes because $p > 0.05$.

Table 7 portrays that 25 respondents (71.43%) who had a good level of knowledge tended to be compliant in consuming Fe tablets during pregnancy, while 4 other respondents (11.43%)

were not compliant in consuming Fe tablets. A total of 5 respondents (14.28%) who had a sufficient level of knowledge were also compliant in consuming Fe tablets, while 1 other respondent (2.86%) was not compliant in consuming Fe tablets. Based on the results of the correlation analysis, the result was p = 0.860, meaning that the level of knowledge had no relationship or connection with the level of compliance because p > 0.05.

Table 8 illustrates that 27 respondents (80.00%) who had a positive attitude tended to be compliant in consuming Fe tablets, 3 respondents (8.57%) who had a negative attitude were also compliant in consuming Fe tablets, and 5 other respondents (14.29%) were not compliant in consuming Fe tablets. Based on the results of the correlation analysis, the result was p = 0.001, meaning that the mothers' attitudes had a significant relationship or relationship with the mothers' level of compliance because p < 0.05.

Characteristics of Pregnant Women

Regarding maternal age, the majority of respondents experienced pregnancy in the early adulthood category, namely 26-35 years (48.60%), where at this age a woman's reproductive organs can be said to be mature and physically and mentally ready to conceive (Ministry of Health of the Republic of Indonesia, 2014). However, several respondents experienced pregnancies < 20 years, where if a woman is pregnant at < 20 years, the reproductive organs in her body are still in the period of development and maturation of the reproductive system, so at this age, they tend to still need more nutritional supplies compared to pregnant women aged > 20 years. Apart from that, several respondents also experienced pregnancies > 35 years, where at this age the body's immune system tends to decrease and start to enter a degenerative period so that there is a greater risk of experiencing health problems during pregnancy, one of which is anemia (Rahmaniah & Linda, 2019).

Based on the characteristics of gestational age, 22 respondents (62.90%) were in the second trimester of their pregnancy, and 13 respondents (37.10%) were in the third trimester of their pregnancy. During pregnancy, blood thinning reaches its maximum limit in the second and

Table 3. Percentage of Respondents' Correct Answers to the Questionnaire of Knowledge

Indicators	Question number	Levels of knowledge				Increase levels (%)
		Before		After		
		Mean Item (%)	Mean Total (%)	Mean Item (%)	Mean Total (%)	
Side effects of consuming Fe tablets	13	37.14	38.57	77.14	78.57	40.00
	20	40.00		80.00		
Causes of anemia	6	45.71	62.85	80.00	87.40	24.55
	16	80.00		94.28		
Ways of preventing anemia	7	80.00	64.28	85.71	85.71	21.43
	12	48.57		85.71		
Definition of anemia	17	68.57	68.57	85.71	85.71	17.14
Symptoms of anemia in pregnant women	9	57.14	54.28	65.71	71.42	17.14
	14	51.42		77.14		
Impact of anemia during pregnancy	10	91.42	71.42	91.42	85.71	14.29
	18	51.42		80.00		
The importance of consuming Fe tablets	2	85.71	87.14	100.00	100.00	12.86
	3	88.57		100.00		
Ways of consuming Fe tablets	4	77.14	81.90	94.28	91.42	9.52
	5	80.00		85.71		
Definition of Fe tablets	8	88.57	95.71	94.28	98.57	2.86
Administration of Fe tablets	11	88.57	84.28	80.00	85.71	1.43
	15	80.00		91.42		

Table 4. Results of Respondents' Answers to the Questionnaire of Attitudes

Indicators	Question number	Attitudes			
		Before		After	
		Mean Item	Mean Total	Mean Item	Mean Total
Ways of consuming Fe tablets	8	3.60	3.42	4.29	4.03
	11	3.57		3.94	
	13	3.91		4.20	
	18	2.43		3.74	
	15	3.71		4.00	
	22	3.31		4.03	
The importance of consuming Fe tablets	4	3.94	3.74	4.43	4.22
	14	4.20		4.34	
	19	4.17		4.46	
	6	3.34		4.11	
	23	3.54		4.06	
	25	3.30		3.94	
Side effects of consuming Fe tablets	5	3.94	3.60	4.46	3.85
	24	3.80		3.97	
	7	3.69		3.86	
	12	3.14		3.57	
	21	3.43		3.74	
Compliance with Fe tablet consumption	1	3.77	3.40	4.29	3.90
	16	3.63		3.94	
	20	2.17		3.80	
	26	3.60		4.14	
	2	3.71		4.00	
	3	3.51		3.91	
	9	3.40		4.11	
	10	3.54		3.86	
	17	3.31		3.80	

Table 5. Differences in Levels of Knowledge, Attitudes, and Compliance with Fe Tablet Consumption before and after Nutrition Counseling

Variables	Minimum	Maximum	Mean ± SD	p-value
Level of knowledge				
Before (%)	5.00	19.00	14.31 ± 3.47	0.001*
After (%)	14.00	20.00	17.46 ± 1.82	
Level of Attitudes				
Before	15.76	64.10	50.00 ± 10.00	0.001*
After	31.87	65.69	50.00 ± 10.00	
Level of compliance				
Before (%)	10.00	100.00	75.92 ± 35.07	0.002*
After (%)	16.67	100.00	91.68 ± 21.86	

Notes: *Wilcoxon signed rank test

Table 6. Attitudes of Pregnant Women with Anemia Based on Level of Knowledge After Nutrition Counseling

Level of knowledge	Attitudes				Total		p-value
	Positive		Negative				
	n	%	n	%	n	%	
Good	23	65.72	6	17.14	**29**	**82.86**	
Sufficient	4	11.43	2	5.71	**6**	**17.14**	0.516*
Total	**27**	**77.15**	**8**	**22.85**	**35**	**100.00**	

Description: *Spearman Correlation

Table 7. Compliance Level of Pregnant Women with Anemia Based on Level of Knowledge After Nutrition Counseling

Level of knowledge	Level of Attitudes				Total		*p-value*
	Compliant		Non-Compliant				
	n	%	n	%	n	%	
Good	25	71.43	4	11.43	**29**	**82.86**	
Sufficient	5	14.28	1	2.86	**6**	**17.14**	0.860*
Total	**30**	**85.71**	**5**	**14.29**	**35**	100.00	

Description: *Spearman Correlation

Table 8. Compliance Level of Pregnant Women with Anemia Based on Mothers' Attitude After Nutrition Counseling

Attitudes	Level of compliance				Total		*p-value*
	Compliant		Non-Compliant				
	n	%	n	%	n	%	
Positive	27	80.00	0	0.00	**27**	**80.00**	
Negative	3	8.57	5	14.29	**8**	**20.00**	0.001*
Total	**30**	**85.71**	**5**	**14.29**	**35**	**100.00**	

Description: *Spearman Correlation

third trimesters or 5-8 months. As the mothers' gestational age increases, the risk of suffering from anemia becomes higher if it is not balanced with a balanced diet and regular consumption of Fe tablets (Herawati & Rusmiati, 2018).

Based on the characteristics of maternal education, the majority of respondents in this study had their final education at the high school or vocational school level (74.30%). Education, most of which is high school, influences the mothers' understanding and analytical power in receiving information (Fitrianingsih, et al, 2019). The higher individuals' education level, the more open their mindset can be in accepting new information so that it can have an impact on positive behavior toward fulfilling nutrition during pregnancy (Herawati & Rusmiati, 2018).

Based on the characteristics of mothers' employment, the majority of respondents were unemployed or housewives (68.60%). Employment is a factor related to economic status and income. Pregnant women who do not work are at risk of experiencing anemia because they tend to have low incomes so they are less able to buy food that contains enough iron, while pregnant women who work tend to have better incomes so they can improve their health status, such as by consuming nutritious food more often and visiting health facilities during pregnancy (Aminin & Dewi, 2020). Families with low incomes also tend to influence mothers to disobey the consumption of Fe tablets compared to families with higher incomes (Agegnehu et al., 2019).

Based on the characteristics of the anemia status of pregnant women, the majority of respondents experienced mild anemia, namely Hb levels in the range of 10-10.9 g/dl (74.30%). Anemia during pregnancy has several impacts,

such as increasing the risk of maternal and child death, the emergence of infectious diseases, premature birth, abortion (miscarriage), and can affect the growth and development of the fetus, both while it is still in the womb and after it is born (Ministry of Health of the Republic of Indonesia, 2021).

Description of Knowledge, Attitudes, and Compliance of Pregnant Women

Differences exist in the level of knowledge, attitudes, and compliance with the consumption of Fe tablets between before and after nutritional counseling, with a significant percentage increase in the level of good knowledge of 28.60%; positive attitude of 17.10%; and compliance with Fe tablet consumption was 22.80%.

Based on the results of interviews before the nutritional counseling, 17.14% of respondents reasoned that they did not consume Fe tablets because they felt they had routinely consumed vitamins or supplements given by obstetricians and therefore they ignored the Fe tablets given by the community health center. This happened because respondents had the perception that the vitamins or supplements given by obstetricians were considered better than the Fe tablets given by the community health center. One capsule of the *folamil genio* type supplement consumed by several respondents contained 1 mg of folic acid; beta-carotene 10,000 IU; vitamin B1 3 mg; vitamin B2 3.4 mg; nicotinamide 20 mg; vitamin B6 2 mg; Ca pantothenate 7.5 mg; Ca carbonate 100 mg; vitamin B12 4 mcg; vitamin D3 400 IU; vitamin K1 50 mcg; biotin 30 mcg; copper gluconate 0.1 mg; Fe polymaltose complex (IPC) 30 mg; DHA from algae 40 mg; and 8 mg arachidonic acid, while the Fe tablets given by the community health center only contain iron (ferrous fumarate which is equivalent to 60 mg elemental iron) and 0.4 mg folic acid (Ministry of Health of the Republic of Indonesia, 2021). Apart from that, 14.28% of respondents who worked said they did not regularly consume Fe tablets because they felt tired and sleepy at night so they forgot to take Fe tablets. Another 5.71% of respondents complained of side effects in the form of nausea when consuming Fe tablets, so they rarely consumed Fe tablets. Based on the results of interviews after the nutritional counseling, 14.28% of respondents who were still disobedient said they experienced nausea that led to vomiting so respondents did not want to force themselves to consume the Fe tablets based on the dose recommended by health workers.

The availability of a checklist filled in on the Fe tablet consumption schedule in the KIA book for pregnant women can also help them to take Fe tablets so that it can help increase compliance. This is also supported by research conducted by Hadiyani and Yunidha (2019), showing that after observations were made in the form of providing a checklist sheet for the Fe tablet consumption schedule which had to be filled out every day, 71% of respondents became compliant in consuming Fe tablets.

The average results of correct answers chosen by respondents on the questionnaire of knowledge before the nutritional counseling on indicators regarding anemia were <80%, while on indicators regarding consumption of Fe tablets >80%. This indicated that the majority of respondents had received fairly good information about the importance of consuming Fe tablets during pregnancy, but still lacked information about anemia during pregnancy. After the nutritional counseling process, respondents experienced an increase in each indicator, where each indicator had an average of > 80%. This showed that through nutritional counseling, respondents could find out more information about anemia and the importance of consuming Fe tablets during pregnancy.

An increase in knowledge can also be influenced by educational factors. Most of the respondents had their final education at the high school or vocational school level. Education, most of which is high school, can influence the mothers' understanding and analytical power in receiving information (Fitrianingsih, et al, 2019). Education is a factor that influences maternal knowledge to know and understand appropriate nutritional intake to meet the needs of the mother and fetus (Savadogo et al, 2014). The higher individuals' education level, the more open their mindset can be in accepting new information so that it can have an impact on positive behavior toward fulfilling nutrition during pregnancy (Herawati & Rusmiati, 2018).

In the questionnaire of attitude, before the nutritional counseling process, the average respondents' answers, if rounded, had a score of 4 on the indicators of the importance of consuming Fe tablets and the side effects of consuming Fe tablets, showing that the majority of respondents already had a fairly positive attitude regarding the importance of consuming Fe tablets. However, some respondents are still not compliant enough in consuming Fe tablets, where the average respondents' answers to the indicator of how to consume Fe tablets and compliance with Fe tablet consumption, if rounded, had a score of 3. After the nutritional counseling, the average respondents' answers to each indicator, if rounded, had a score of 4. This showed that there was a positive increase in the respondents' attitudes, where the respondents could accept any information provided well during nutritional counseling so that it had an impact on their attitudes of being obedient in consuming Fe tablets.

By attending nutritional counseling sessions, pregnant women become more familiar with the causes of problems and understand the nutritional needs required during pregnancy, the impact of anemia during pregnancy, and the potential to overcome their health problems. If they feel that the behavior is not appropriate, then the mothers are moved to be selective in choosing better behavior, which can have an impact on increasing their attitudes toward consuming Fe tablets (Khairia, 2017).

Differences in Levels of Knowledge, Attitudes, and Compliance Before Fe Tablet Consumption and After Nutrition Counseling

Based on the results of bivariate analysis, the results obtained were $p < 0.05$ at the level of knowledge ($p = 0.001$); attitude ($p = 0.001$); and compliance with Fe tablet consumption (0.002), where these results indicated that there was an influence of providing counseling on the level of knowledge, attitudes and compliance with Fe tablet consumption. These results were in line with research results conducted by Khairia (2017) showing the influence of nutritional counseling on pregnant women's knowledge ($p = 0.000$) and mothers' attitudes ($p = 0.000$). This is also in line with research conducted by Yanti et al. (2018), showing the influence of nutritional counseling on pregnant women's knowledge ($p = 0.028$) and mothers' attitudes ($p = 0.001$). Research from Kamau et al (2019), stated that during the research the attitude of pregnant women in the intervention group toward consuming iron-folic acid (IFAS) resulted in an overall positive change in attitudes. Research by Djati et al. (2017) also showed the influence of counseling on compliance with blood supplement tablet consumption ($p = 0.002$). This is also supported by research by Purbowati (2016), where there was an effect of providing nutritional counseling on compliance with iron tablet consumption in the treatment group ($p = 0.001$). Research by Berhane & Belachew (2022) also stated that providing education through counseling is effective in increasing compliance in consuming iron-folic acid supplements (IFAS) with a percentage increase of 42.6% in the intervention group. Providing education through counseling is effective in increasing the knowledge of pregnant women, encouraging a diet rich in iron, and increasing consumption of IFA (iron folic-acid) tablets or Fe tablets (Nahrisah et al, 2020).

Based on the results of the analysis of respondents' attitudes, it shows that there was an improvement in respondents' attitudes after the nutritional counseling. In both before and after the nutritional counseling, the majority of respondents had positive attitudes (T score > 50). Respondents were able to accept any information provided well, both by health workers before nutritional counseling, and by researchers during nutritional counseling. This was because health workers were good enough at providing information about how to consume Fe tablets and the reasons for the importance of consuming Fe tablets during pregnancy. In addition, most respondents were currently pregnant with their second child, so they already had experience with previous pregnancies. According to Azwar (2013), something that an individual has experienced and is currently experiencing plays a role in forming attitudes and influencing appreciation of social stimuli.

Counseling can be a strategy for changing social behavior and communication by influencing actions that can be observed and measured to improve health status (Juma et al, 2015). An increase in understanding and knowledge

can certainly have an impact on changes in consumption patterns of foods that are nutritious and contain high Fe, as well as being more compliant in consuming Fe tablets. Through counseling, pregnant women can change their attitudes and behavior to improve their nutritional status (Bara et al, 2015). Counseling can strengthen the women's motivation which is expected to increase compliance in consuming Fe tablets (Djati et al, 2017). If the mothers understand the importance of consuming Fe tablets well, then they tend to try to improve themselves to comply with consuming Fe tablets regularly (Khairia, 2017).

Correlation between Knowledge, Attitudes, and Compliance After Nutrition Counseling

Based on the results of the correlation analysis of the mothers' attitudes based on the level of knowledge after nutritional counseling, the result was $p = 0.516$, meaning that the level of knowledge had no relationship or connection with the mothers' attitudes because $p > 0.05$. This could happen because the majority of respondents already had fairly good knowledge regarding information about the importance of consuming Fe tablets during pregnancy, but still lacked information about anemia during pregnancy before attending nutritional counseling. Apart from that, most of the respondents were also experiencing their second pregnancy, so respondents had more experience with previous pregnancies. According to Azwar (2013), something that an individual has experienced and is currently experiencing plays a role in forming attitudes and influencing appreciation of social stimuli.

Based on the results of the correlation analysis of the mothers' level of compliance based on the level of knowledge after nutritional counseling, the result was $p = 0.860$, meaning that the level of knowledge had no relationship or connection with the level of compliance because $p > 0.05$. This is in line with research conducted by Purwati and Dayani (2022). The research showed that there was no significant relationship between knowledge and compliance with consuming blood supplement tablets ($p = 0.2008$). These results are also supported by research conducted by Adnyana et al. (2020) revealing that respondents who had good knowledge still had a low level of compliance in consuming blood supplement tablets.

Based on the results of the correlation analysis of the level of compliance based on the mothers' attitude after nutritional counseling, the result was $p = 0.001$, meaning that the mothers' attitude had a significant relationship or relationship with the mothers' level of compliance because $p < 0.05$. This showed that a good understanding and self-awareness regarding the importance of consuming Fe tablets during pregnancy can have an impact on the mothers' attitudes in taking action to comply with consuming Fe tablets. The implementation of health behavior was influenced by a positive attitude to prevent anemia during pregnancy, one of which was obediently consuming Fe tablets. According to Notoatmodjo (2014), attitude is one of the factors that can influence health behavior. This is in line with research conducted by Utari and Rahmad (2022) revealing that there was a relationship between attitude and compliance with the consumption of Fe tablets in pregnant women with a result of $p = 0.018$. This is also supported by the health belief model theory put forward by Strecher & Rosenstock (1997), where the presence of good or bad perceptions originating from knowledge, experience, or information can provide confidence which stimulates individuals to do something, in this case, being obedient to consuming Fe tablets.

CONCLUSION

There was a percentage increase in the level of knowledge after the administration of nutritional counseling (28.60%); attitude (17.10%); and compliance with Fe tablet consumption (22.80%). There is an effect of providing nutritional counseling on the level of knowledge ($p = 0.001$); attitude ($p = 0.001$); and compliance with Fe tablet consumption ($p = 0.002$). Health workers at the Grogol Community Health Center are suggested to conduct nutritional counseling for every pregnant woman who experiences anemia even though the pregnant woman's Hb level is in the mild anemia category so that anemia during pregnancy can be treated early when the Hb is checked in the first trimester of pregnancy.

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