Relationship of Iron Consumption with Anemia in Pregnant Women

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ABSTRACT

The prevalence of anemia in pregnant women in Indonesia ranges from 20-80%, but in general, many studies show anemia in pregnant women is greater than 50%. In the western part of Indonesia, the area is classified as high, anemia in Aceh is 56.6%, North Sumatra 77.9%, West Sumatra 8.9%, Riau 65.6%, Jambi 74.2%, South Sumatra 58.3, Lampung 60.7%. In pregnancy, anemia can harm maternal and infant morbidity and mortality. In a pregnant state, the supply of iron from food is still not sufficient so that a supplement is needed in the form of blood/Fe added tablets. Because the benefits of Fe tablets are very large for the prevention of anemia in pregnant women. However, there are still many pregnant women who do not consume Fe tablets up to 90 tablets. So that the administration of Fe tablets has not yet reached the target where the central government has set it. The results of Riskesdas in 2013 from 89.1% of pregnant women who consumed Fe tablets, only 33.3% consumed up to 90 Fe tablets as recommended.

Keywords: *iron consumption, anemia, pregnant women*

INTRODUCTION

Anemia in pregnant women is a condition in which the hemoglobin level is below 11 g/dl. Anemia that often occurs in pregnant women is anemia due to iron deficiency (Fe) or called iron nutritional anemia (AGB) (1). The current problem in Indonesia is the high maternal mortality rate (MMR) is still the highest in Asia (2). One of the contributing factors is anemia in pregnancy. The Ministry of Health has required childbirth to be assisted by competent health personnel. This is an effort to achieve the target of the Sustainable Development Goals (SDGs) or the Sustainable Development Goals (TPB) in reducing the global maternal mortality rate (MMR) to less than 70 per 100,000 live births in 2030 (3). World Health Organization (WHO) 2018 states that the incidence of anemia in pregnant women ranges from 20%-89% and sets hemoglobin levels of 11 gr /dl as the basis. In 2013 in ASEAN countries the incidence of anemia varied, in Indonesia it was around 70% in the Philippines around 55%, Thailand 45%, Malaysia 30%, and Singapore 7% suffering from Anemia (4). The prevalence of anemia in pregnant women in Indonesia ranges from 20-80%, but in general, many studies show anemia in pregnant women is greater than 50%. In the western part of Indonesia, the area is high, anemia in Aceh as much as 56.6%, north Sumatra 77.9%, West Sumatra 8.9%, Riau 65.6%, Jambi 74.2%, South Sumatra 58.3%, Lampung 60.7% (5).

The factors that cause maternal death most often occur, namely bleeding during pregnancy or childbirth, eclampsia, and infection, not only that maternal health factors such as malnutrition while pregnant, anemia, hypertension, can trigger the occurrence of death (5). Approximately 95% of cases of anemia during pregnancy are due to iron deficiency. Family income is the cause of poor consumption patterns of society, not all people can consume animal side dishes in food. Diversity of food consumption plays an important role in helping to increase the absorption of Fe in the body. Anemia in pregnancy is a condition in which mothers with hemoglobin levels below 11 g% in the I and III trimesters or < 10.5g% in the SECOND trimester, anemia in pregnancy is also often called Potential Danger To Mother and Children or potentially harmful to the mother and child, therefore anemia in pregnancy requires special and serious attention from all parties concerned (6).

In pregnancy, anemia can harm maternal and infant morbidity and mortality. The effects of anemia on the fetus include intrauterine growth retardation (IUGR), premature babies, babies with congenital defects, low birth weight (LBW), and an increased risk of fetal death in the womb. The impact of anemia on pregnant women is shortness of breath, fatigue, palpitations, hypertension, sleep disturbances, preeclampsia, abortion and increases the risk of bleeding before and during delivery and even maternal death (7).

In a pregnant state, the supply of iron from food is still not sufficient so that a supplement is needed in the form of blood/Fe tablets. Because the benefits of Fe tablets are very large for the prevention of anemia in pregnant women. The Ministry of Health recommends every pregnant woman

consume at least 90 Fe tablets during pregnancy with a dose of 60 mg. However, there are still many pregnant women who do not consume Fe tablets up to 90 tablets. So that the administration of Fe tablets has not yet reached the target where the central government has set it. The results of Riskesdas in 2013 from 89.1% of pregnant women who consumed Fe tablets, only 33.3% consumed up to 90 Fe tablets as recommended (8). So the purpose of this study was to determine the relationship between iron and the incidence of anemia in pregnant women.

METHODS

The method is to use analysis of various literature. The literature used is derived from the research journal of the last 10 years from Google source Scholer with the keywords "anemia of pregnant women" and "iron consumption in pregnant women" and "anemia of pregnant women of iron consumption. The selected data is data that can be accessed full text and related to the theme of literature.

RESULTS AND DISCUSSIONS

Table 1. Literature Review Matrix

NU MB ER	AUTHOR (YEAR)	TITLE	CATEG ORIES/ PUBLIS HERS	METHODS/ ANALYSIS	VARIABLE	DISCUSSION/RES ULT
1	Octa Dwiend a R (2013) (9)	Faktor Risiko Kejadian Anemia pada Ibu Hamil	Jurnal Keseha tan Komu nitas	Desain penelitian: <i>cross sectional</i> Analysis: <i>regresi</i> <i>logistic ganda</i> Sumber: data primer, wawancara	Variable Independent: Tingkat pendidikan, pengetahuan ibu hamil, kecukupan zat besi, paritas, status KEK, umur ibu, pekerjaan ibu dan pendapatan keluarga. Variabel Dependen: Anemia pada ibu hamil	1. Hubungan kejadian anemia pada ibu hamil yaitu : paritas (OR = 1,66- 6,16), konsumsi zat besi (OR = 1,59-5,80), status gizi KEK (OR = 1,44-2,50) dan pendidikan (OR = 1,24-4,50) 2. Tidak berhubungan secara signifikan dengan kejadian anemia pada ibu hamil yaitu : umur ibu, pendapatan keluarga, pekerjaan dan pengetahuan ibu
2	Fidyah A,	Pengaruh Kekuranga	Jurnal Keseha	Desain penelitian:	Variabel Independen:	1. 58,1% ibu hamil KEK dan 61,3%

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	Atika W, Ria P (2014) (10)	n Energi tan Kronis (KEK) dengan Kejadian Anemia pada Ibu Hamil		<i>quasi eksperiment</i> Analysis: <i>t- test dependent</i> Sumber: data primer, pengukuran hemoglobin ibu hamil trimester I	Kekurangan Energi Kronis Variabel Dependen: Anemia pada ibu hamil	ibu hamil anemia. 2. Terdapat hubungan antara KEK dengan kejadian anemia pada ibu hamil 3. Ada pengaruh KEK terhadap kejadian anemia pada ibu hamil ($p \leq 0.05$) 4. Ibu hamil yang KEK cenderung lebih banyak mengalami anemia dibandingkan tidak terjadi anemia karena pola konsumsi dan absorpsi makanan yang tidak seimbang selama kehamilan
3	Ikeu T, M. Rizal, Lalu J, Risti R (2016) (11)	Faktor Risiko Anemia Ibu Hamil di Indonesia	Jurnal Gizi Pangan	Desain penelitian: <i>cross sectional</i> Analysis: <i>chi- square</i> Sumber: data primer, wawancara dan pengukuran oleh Tim Risksdas dari Balitbangkes Kementerian Kesehatan RI	Variable Independent: Usia, pendidikan, jumlah eklahiran, frekuensi kehamilan, jarak kehamilan, pemeriksaan selama kehamilan, dan status gizi berdasarkan pengukuran Variabel Dependen: Anemia pada ibu hamil	1. Prevalensi anemia pada ibu hamil di Indonesia masih tergolong tinggi, baik di pedesaan 37,9% maupun di perkotaan 38,2% 2. Status gizi KEK sebagai faktor risiko utama dengan kejadian anemia ibu hamil dengan peluang 1975 kali (OR = 1,279-3,049)
4	Melory s L. Purwan ingtyas dan Galuh N. Prames	Faktor Kejadian Anemia Ibu Hamil	Hygeia Journal of Public Health Resear ch and Develo	Desain penelitian: <i>cross sectional</i> Analysis: <i>chi- square</i> dan regresi logistik	Variable Independent: Pendapatan, pengetahuan, pendidikan ibu, usia, tingkat kecukupan gizi zat besi, tingkat	1. Ibu hamil yang mempunyai pendapatan rendah sekitar (75,7%) (< 1.685.000) 2 kali lebih besar dari yang mempunyai

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	wari (2017) (1)		pment	Sumber data: data primer dengan pengukuran serta wawancara dan data sekunder diperoleh dari Dinas Kesehatan Kota Semarang dan Puskesmas Karang Anyar.	kecukupan gizi protein, tingkat kecukupan gizi vitamin C, status gizi, paritas, dan kebiasaan minum teh Variabel dependen: Anemia pada ibu hamil	pendapatan tinggi. 2. Ibu yang memiliki pengetahuan tentang anemia dan gizi ibu hamil mempunyai pengetahuan kurang (<60%), pengetahuan cukup (60-80%), dan mempunyai pengetahuan baik (>80%) 3. Ibu dengan (4,1%) mempunyai pendidikan SDI, (21,6%) pendidikan SMP, (68,9%) pendidikan SMA, dan (5,4%) pendidikan perguruan tinggi 4. Tidak ada hubungan antara pendapatan (p=0,578), pengetahuan (p=0,431), pendidikan (p=0,239), usia (p=1,000), kecukupan zat besi (p=0,578), protein (p=0,615), vitamin C (p=0,729), paritas (p=1,000), kebiasaan minum teh (p=0,953) dengan kejadian anemia pada ibu hamil 5. Ada hubungan antara status gizi (p=0,000) dengan kejadian

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						anemia pada ibu hamil
5	Rini Hariani Ratih (2017) (12)	Pengaruh Pemebrrian Zat Besi (Fe) Terhadap Peningkatan Hemoglobi n Ibu Hamil Anemia	Journal of Midwifery Science	Desain penelitian: <i>quasi eksperimen</i> Analysis: <i>paired sampel t-test</i> Sumber data: data primer	Variabel Independen: Pemberian zat besi (Fe) Variabel dependen: Peningkatan hemoglobin ibu hamil anemia	1. Rata-rata kadar hemoglobin ibu hamil yang anemia sebelum pemebrrian tablet zat besi (Fe) adalah 8,81 gr/dl 2. Sesudah pemberian tablet zat besi (Fe) adalah 12,59 gr/dl 3. Ada pengaruh pemebrrian tablet zat besi (Fe) terhadap peningkatan kadar hemoglobin pada ibu hamil yang anemia (p-value = 0,0001 < 0.05)
6	Dina Mariana, Dwi Wulandari, Padila (2018) (13)	Hubungan Pola Makan Dengan Kejadian Anemia Pada Ibu Hamil Di Wilayah Kerja Puskesmas	Jurnal Keperawatan Silampari	Desain penelitian: <i>cross sectional</i> Analysis: <i>chi-square</i> Sumber: data primer dan sekunder	Variabel independen: Pola makan pada ibu hamil Variabel dependen: Kejadian anemia	1. Terdapat 50% memiliki pola makan yang tidak sehat 2. Sebanyak 15 responden dengan pola makan tidak sehat terdapat 46,7% mengalami anemia, sedangkan dengan pola makan sehat 93,3% tidak mengalami anemia 3. Ada hubungan yang bermakna antara pola makan dengan kejadian anemia pada ibu hamil (p-value = 0,019 < α 0,05)

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7	Rachm ahnia Pratiwi dan Dhenok Widari (2018) (14)	Hubungan Konsumsi Sumber Pangan <i>Enhancer</i> dan <i>Inhibitor</i> Zat Besi dengan Kejadian Anemia pada Ibu Hamil	Amert a Nutr	Desain penelitian: <i>cross sectional</i> Analysis: uji korelasi <i>spearman</i> Sumber: data primer	Variabel independent: Konsumsi sumber pangan <i>Enhancer</i> dan <i>Inhibitor</i> zat besi Variabel dependen: Kejadian anemia pada ibu hamil	1. Hasil penelitian menunjukkan rata-rata hemoglobin pada ibu hamil adalah 11,21 +/- 1,07 gr/dl. 2. Sebagian ibu hamil trimester III jarang mengonsumsi sumber pangan <i>enhancer</i> zat besi (60,5%) dan jarang mengonsumsi <i>inhibitor</i> zat besi (39,5), yang mengalami anemia tinggi (41,9%) 3. Tidak terdapat hubungan antara kebiasaan konsumsi sumber pangan <i>enhancer</i> zat besi dengan kejadian anemia (p= 0,420) 4. Terdapat hubungan cukup kuat antara kebiasaan konsumsi sumber pangan <i>inhibitor</i> zat besi dnegan kejadian anemia pada ibu hamil trimester III (p= 0,005, r= 0,424)
8	Leny (2019) (5)	Faktor- faktor yang Berhubung an dengan Kejadian Anemia pada Ibu Hamil	Jurnal Kebida nan: Jurnal Medic al Scienc e Ilmu Keseha tan Akade mi	Desain penelitian: <i>Cross Sectional</i> Analysis: <i>chi- square</i> Sumber: data primer dan data sekunder	Variabel independen: Usia ibu hamil, paritas, jarak kelahiran, usia kehamilan, pengetahuan Variabel dependen: Kejadian anemia pada ibu hamil.	1. Ada hubungan antara usia ibu hamil (p = 0,000), status gizi (p = 0,000) dan paritas (p = 0,000) dnegan kejadian anemia pad aibu hamil

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9	Tessa S dan Vera F (2019) (15)	Faktor- faktor yang Berhubung an dengan Kejadian Anemia pada Ibu Hamil	Kebida nan Budi Mulia Palem bang Jurnal Kebida nan: Jurnal Medic al Scienc e Ilmu Keseha tan Akade mi Kebida nan Budi Mulia Palem bang	Desain penelitian: <i>cross sectional</i> Analysis: <i>chi-square</i> Sumber: data primer dari hasil wawancara dan data sekunder	Variabel independen: Usia ibu hamil, jarak kelahiran, usia kehamilan, dan pengetahuan Variabel dependen: Kejadian anemia pada ibu hamil	1. Ibu hamil dengan usia <20 tahun dan >35 tahun (75,1%), paritas <4 (81,63%), jarak kelahiran <2 tahun (53,1%), TM III (51,0%), pengetahuan kurang (57,1%), kejadian anemia (53,1%) 2. Ada hubungan antara usia ibu hamil ($p = 0,000$), jarak kelahiran ($p = 0,000$), usia kehamilan ($p = 0,000$), dan pengetahuan ($p = 0,000$) dengan kejadian anemia pada ibu hamil 3. Tidak ada hubungan antara paritas dengan kejadian anemia pada ibu hamil ($p=0,472$)
10	Dwiana Kartika Putri (2019) (16)	Hubungan Pengetahua n dan Sikap Ibu Hamil Trimester III dalam Konsumsi Tablet Fe dengan Terjadinya Anemia di BPM Mardiani Ilyas Aceh Tahun 2018	Jurnal Midwi fery Update (MU)	Desain penelitian: <i>cross sectional</i> Analysis: <i>chi-square</i> Sumber: data primer, data sekunder dan data tersier	Variabel independen: Pengetahuan dan sikap ibu hamil trimester III dalam konsumsi tablet Fe Variabel dependen: Anemia	1. Ada hubungan pengetahuan ibu hamil trimester III dengan terjadinya anemia, nilai probabilitasnya $0,000 < 0,05$. 2. Ada hubungan sikap Ibu hamil trimester III dengan terjadinya anemia, nilai probabilitasnya $0,000 < 0,05$. 3. Pengetahuan ibu

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						kurang karena ibu merasa bahwa pengetahuan itu hanya didapat dijenjang pendidikan saja sehingga ibu memiliki pengetahuannya terbatas, pada kenyataannya pengetahuan tidak hanya didapatkan dari jenjang pendidikan saja
11	Widya Nurul Fatimah, I Nyoman Widajadnja dan Wulan M. Soemardji (2019) (17)	Hubungan Tingkat Pengetahuan Ibu Hamil tentang Anemia dalam Kehamilan terhadap Perilaku Konsumsi Suplemen Zat Besi di Wilayah Kerja Puskesmas Talise	Jurnal Ilmiah Kedokteran	Desain penelitian: <i>cross sectional</i> Analysis: <i>chi-square</i> Sumber: data primer	Variabel independent: Pengetahuan ibu hamil Variabel dependen: Perilaku konsumsi suplemen zat besi	1. Hasil berdasarkan 100 sampel, 62% ibu hamil berpengetahuan baik, 28% ibu hamil berpengetahuan cukup dan 10% ibu hamil berpengetahuan kurang 2. Perilaku konsumsi suplemen zat besi pada ibu hamil didapatkan yang berperilaku baik sebanyak 77% dan berperilaku kurangs ebanyak 23% 3. Terdapat hubungan bermakna antara tingkat pengetahuan ibu hamil tentang anemia dlam kehamilan terhadap perilaku konsumsi suplemen zat besi.
12	Fitriana Ikhtiari	Kepatuhan Konsumsi	Jurnal Keseha	Desain penelitian:	Variabel independen:	1. Mayoritas responden patuh

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	nawati Fajrin (2020) (8)	Zat Besi tan (Fe) Terhadap Kejadian Anemia Pada Ibu Hamil		<i>cross sectional</i> Analysis: <i>Fisher Exact</i> <i>Test</i> Sumber data: data primer dan data sekunder	Kepatuhan minum tablet Fe Variabel dependen: Kejadian anemia pada ibu hamil	dalam konsumsi tablet Fe yaitu sebanyak 12 responden (63%). 2. Mayoritas responden tidak mengalami anemia yaitu sebanyak 13 responden (68.4%). 3. Mayoritas responden yang patuh konsumsi tablet Fe tidak mengalami anemia yaitu sebanyak 10 responden (83.4%), sedangkan mayoritas responden yang tidak patuh konsumsi tablet Fe mengalami anemia sebanyak 4 responden (57.1%). 4. Terdapat pengaruh antara kepatuhan minum tablet Fe dengan kejadian anemia pada Ibu Hamil di BPS Diana Ernawati Desa Laren Kecamatan Laren Kabupaten Lamongan, dengan p-value (0.011). 5. Diperlukan upaya promosi kesehatan, komunikasi informasi dan edukasi (KIE) untuk meningkatkan kesadaran ibu hamil pentingnya

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						dalam kepatuhan mengonsumsi tablet Fe.
13	Ni Made Ayu Yulia Raswati Teja, Gusti Ayu Dwina Mastry agung, Ida Ayu Ningrat Pangru wating Diyu (2021) (18)	Hubungan Pengetahua n dan Paritas dengan Anemia pada Ibu Hamil	Jurnal Menar a Medik a	Desain Penelitian: <i>cross sectional</i> Analysis: uji <i>chi-square</i> Sumber data: data primer	Variabel independen: Pengetahuan dan paritas Variabel dependen: kejadian Anemia pada ibu hamil	1. Sebagian besar ibu tidak mengalami anemia sebesar 89,1% 2. Terdapat hubungan yang signifikan paritas dengan anemia (P=0,002) dan pengetahuan dengan anemia (p=0,001)
14	Delvian a Devi, Anastas ia M. Lument ut, Eddy Suparm an (2021) (19)	Gambaran Pengetahua n dan Sikap Ibu Hamil dalam Pencegahan Anemia pada Kehamilan di Indonesia	e- CliniC	Desain penelitian: <i>Literatur Riview</i> Analysis: kata kunci anemia AND pregnant woman AND knowledge OR attitude AND Indonesia Untuk Pubmed, ClinicalKey, dan ScienceDirect, dan kata kunci anemia AND Ibu Hamil AND pengetahuan AND sikap Untuk Google Scholar Sumber data: Data sekunder dari literatur terbitan 10 tahun terakhir	Variabel independen: Pengetahuan dan sikap Variabel dependen: Mencegah kejadian anemia pada ibu hamil di Indonesia	1. Menurut pengetahuan ibu hamil mengenai anemia, lima penelitian menunjukkan mayoritas ibu hamil memiliki pengetahuan cukup, empat literatur lainnya menunjukkan hasil pengetahuan buruk, sedangkan hasil pengetahuan baik didapatkan pada dua penelitian. 2. Menurut sikap, 7 penelitian mendapat hasil sikap positif, 3 penelitian mendapat hasil sikap negatif, dan 1 penelitian mendapat hasil yang sama banyak untuk positif dan negative.

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				yang dapat diakses full text		3. Mayoritas ibu hamil di beberapa daerah di Indonesia memiliki pengetahuan cukup mengenai anemia dan pencegahan, serta memiliki sikap positif terhadap pencegahan anemia pada kehamilan
15	Arman do S, Elpira Asmin, Christina R, Johan B (2021) (7)	Hubungan Pengetahuan dan Kepatuhan Ibu Hamil Konsumsi Tablet Tambah Darah dengan Kejadian Anemia di Kecamatan Leitumur Selatan dan Teluk Ambon	Jurnal Epide miologi Kesehatan Komunitas	Desain penelitian: <i>cross sectional</i> Analysis: Analysis univariat dan bivariat dengan uji <i>Chi Square</i> Sumber data: data primer	Variabel independen: Pengetahuan dan kepatuhan ibu hamil konsumsi tablet tambah darah Variabel dependen: Kejadian anemia	1. Sebanyak 50,3% mengalami anemia dan hanya 3% ibu hamil memiliki pengetahuan baik serta persentase ibu hamil yang patuh minum obat TTD hanya sebesar 21,8%. 2. Upaya peningkatan pengetahuan semata tidak penting jika tidak disertai sebuah tindakan dari pengetahuannya itu. 3. Pada tabel hubungan responden dengan kejadian anemia menunjukkan bahwa tidak ada hubungan yang signifikan antara pengetahuan TTD dengan kejadian anemia di kecamatan Leitumur Selatan dan Teluk Ambon dengan (p= 0,443)

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						4. Pada tabel hubungan kepatuhan konsumsi TTD dengan kejadian anemia menunjukkan bahwa tidak ada hubungan yang signifikan antara perilaku kepatuhan dengan kejadian anemia di kecamatan Leitimur Selatan dan Teluk Ambon dengan (p= 0,135)

Based on the results of Tanziha's research in 2016 that the prevalence of anemia in pregnant women in Indonesia is still relatively high. Anemia in pregnant women is classified as high, occurring in rural areas (37.9%) and urban areas (38.2%) (11). This is presumably because the population in rural areas belongs to the lower-middle economy (11). However, in contrast to the results of Purwaningtyas' research in Semarang City, it shows that there is no relationship between income and anemia in pregnant women. This is because the residents around the Karang Anyar Health Center are factory workers. After all, the location is around the center area of large industries indicating that they already understand the food that pregnant women must consume so they try to meet nutritional needs that are adjusted to purchasing power (1).

As the results of a study conducted in the Tenayan Raya Pekanbaru Health Center in 2012, the variables at risk of anemia in pregnant women were education level, knowledge of pregnant women, iron adequacy, parity, SEZ status, maternal age, mother's occupation, and family income. Parity, iron consumption, nutritional status of SEZ, and education have a causal relationship with the incidence of anemia in pregnant women (20). While the results of Tessa's research in the Bandar Jaya Lahat Health Center area showed that between the age of pregnant women, birth spacing, gestational age, and knowledge there was a relationship with the incidence of anemia in pregnant women (15). The results of Leny's research at the Budi Mulia Medika Clinic in Palembang in 2018 showed that only age, nutritional status, and parity were associated with the incidence of anemia in pregnant women (5). However, according to the results of Tanziha's research in 2016 that the main risk factor

for anemia in pregnant women in Indonesia is the only nutritional status (Chronic Energy Deficiency/KEK) (11). As the results of Purwaningtyas' research in Semarang City, only nutritional status is associated with the incidence of pregnant women (1).

In addition, one of the factors of anemia in pregnant women, namely not consuming Fe is the level of knowledge that can form attitudes in adherence to taking Fe tablets by consuming it every day (8). Pregnant women with less knowledge about anemia influence behavior resulting in a lack of healthy behavior to prevent anemia during pregnancy (18). According to the results of Delviana's literature study that in various regions in Indonesia the knowledge and attitudes of pregnant women in preventing anemia vary widely (19). Meanwhile, knowledge of pregnant women about anemia is very helpful in preventing anemia during pregnancy (19). Knowledge can be influenced by the education and socio-economic family of pregnant women. Pregnant women with low socioeconomic status resulted in a higher prevalence of anemia than high socioeconomic groups (19).

Chronic Energy Deficiency (KEK) is a condition in which a person does not consume enough food energy sources, causing a person's nutritional status to be poor, such as energy sources containing macronutrients that are needed a lot by the body and micronutrients needed by the body in small amounts, while pregnant women consume food energy sources need to be added to meet the needs of the mother and fetus (10). This is because during pregnancy there are physiological changes that result in an increase in the volume of fluid and red blood cells and a decrease in the concentration of nutrient-binding proteins in the blood circulation (11).

Pregnant women with SEZ status can affect the process of fetal growth and can cause other things such as miscarriage, stillbirth, abortion, congenital defects, neonatal death, and birth with low birth weight (10). In addition, the fetus will experience impaired growth and development due to malnutrition, pregnant women suffer from anemia and the blood supply that delivers oxygen and food to the fetus will be hampered (1). Pregnant women experience CED due to lack of nutritional intake containing balanced nutrition such as not consuming foods containing iron during pregnancy or not consuming Fe tablets can result in anemia which harms the mother and fetus (10).

The results show that in urban areas pregnant women with SEZ status have a 3.243 times chance of anemia compared to pregnant women without SEZ (11). While the results of research in the working area of the Tenayan Raya Public Health Center in 2012 showed that there was a causal relationship between SEZ status and the incidence of anemia in pregnant women. Pregnant women with SEZ status cause anemia 2.8 times compared to non-CED pregnant women (20).

According to Fidyah's 2014 research, pregnant women in the first trimester usually experience nausea (nausea) or emesis (vomiting) resulting in a lack of nutritious food. This results in absorption and can affect the health of the mother and fetus because the food in the body does not take place properly (10). If the diet is not balanced, the mother and baby will experience a lack of substances,

especially iron for the formation of red blood cells which are very useful for the baby's growth, and if the iron is not fulfilled, pregnant women experience anemia (13).

Pregnant women with a healthy diet can also experience anemia due to other factors such as not taking Fe tablets or a type of folic acid (13). In addition, the way of processing foodstuffs can affect the bioavailability of iron in foodstuffs, for example, the washing method can dissolve iron in water and the heating process affects the content of substances in food (13). The meal schedule is also influenced by quantity and quality, so pregnant women are recommended to consume Fe tablets regularly to prevent anemia (13). The results of research in the working area of the Tenayan Raya Public Health Center in 2012 showed that there was a causal relationship between iron consumption and the incidence of anemia in pregnant women. Pregnant women who consume iron 30 grains/month cause anemia 3 times compared to consuming iron 30 grains/month (20).

If the supply of iron in the body is lacking, pregnant women are at risk for anemia which usually occurs in hemodilution (blood-thinning) in the first trimester of pregnant women (10). In addition to consuming table Fe, pregnant women in the first trimester meet iron intake which can be obtained from foods (animal or vegetable) that contain iron so that Hb levels in the blood increase (10). However, for the third trimester, pregnant women can experience anemia if the Hb level is <11 g% because the absorbed food is not sufficient to meet the needs of the mother and fetus (8). As the results of Kartika's research, there is a relationship between knowledge of the attitudes of pregnant women in the third trimester in consuming Fe tablets with the occurrence of anemia (16). Knowledge of pregnant women about anemia can be healthy for themselves by including knowing the meaning, causes, consequences, and prevention (17). So it is recommended that during pregnancy at least pregnant women consume 90 iron tablets to maintain pregnancy because giving supplements in the form of iron tablets are useful as a synthesis of blood cells and muscle blood as well as iron reserves (8).

The need for iron is to meet the iron needs of pregnant women and their fetuses. Pregnant women obediently take Fe tablets, the possibility of anemia is getting smaller (8). However, it is different from the results of Armando's study that there is no relationship between the compliance of pregnant women in consuming Fe tablets with the incidence of anemia (7). However, the percentage of anemia was lower in pregnant women who obediently consumed Fe tablets (7).

The behavior of consuming Fe tablets should also be started since adolescents aged 15 years to prevent anemia. Adolescent girls who have anemia during pregnancy will increase the incidence of premature labor, IUGR, postpartum hemorrhage, heart defects, postpartum infection of the fetus, and stunting (21). Therefore, the adherence of adolescent girls and WUS to consume extra pills is one indicator of success in the prevention and control program for anemia in adolescent girls and WUS (22). Support and an active role from the family and environment of pregnant women, assisting in

health surveillance during pregnancy, as well as being able to take the right action when health problems are found in pregnant women (19).

Based on the results of Rini's research, the average hemoglobin level in pregnant women before the examination of iron tablets was 8.81 g/dl and after administration of iron, tablets was 12.58 g/dl (12). As in Pratiwi's research that can increase enhancers (pushing factors) to increase the absorption of nutrients such as vitamins A, C, B2, B6 and decrease inhibitors (inhibiting factors) to inhibit iron absorption such as tannins in tea and coffee in addition to substances in foods that contain calcium, phosphate, and phytate which are consumed in large quantities (14). The increase in hemoglobin levels after consuming blood-supplementing tablets or iron tablets in pregnant women was obtained by 3.72 g/dl to help meet the needs of the mother and maximize brain growth and the baby's weight (12).

CONCLUSIONS AND SUGGESTIONS

Anemia in pregnant women is a condition in which the hemoglobin level is below 11 g/dl. Anemia that often occurs in pregnant women is anemia due to iron deficiency (Fe) or called iron nutritional anemia (AGB). About 95% of cases of anemia during pregnancy are due to iron deficiency. In pregnancy, anemia can harm maternal and infant morbidity and mortality. In a pregnant state, the supply of iron from food is still not sufficient so that a supplement is needed in the form of blood/Fe tablets. Because the benefits of Fe tablets are very large for the prevention of anemia in pregnant women. So the consumption of iron and the incidence of anemia in pregnant women are closely related to one another. Pregnant women with high parity have a 33.0 times risk of developing anemia.

It is recommended that you consume Fe tablets or iron supplements from 15 years of age to avoid anemia during pregnancy. Pregnant women are also advised to take Blood Supplement Tablets (TTD) regularly during pregnancy followed by consuming vegetables and fruits to help increase iron levels in the body to avoid anemia during pregnancy. In addition, reducing the consumption of food sources of iron inhibitors to prevent anemia such as tannins in tea and coffee as well as foods containing large amounts of calcium, phosphate, and phytate.

For pregnant women at the beginning of the first trimester who experience nausea or vomiting when giving Fe tablets, they should continue to consume healthy foods such as fruits/vegetables in small portions but often do it and avoid foods that stimulate nausea and vomiting so that the absorption of the food consumed can be absorbed. well. In addition, to help iron absorption, vitamin C can be given. If during pregnancy you are still anemic, then Hb can be checked at the first visit to check for anemia.

The most important thing is that pregnant women are given educational interventions regarding nutrition, anemia, increasing food intake, and nutritional knowledge about anemia and iron-rich foods. Provide support and an active role from the family and environment of pregnant women to assist in health surveillance during pregnancy.