

## DETERMINANTS OF ANEMIA PREVALENCE IN URBAN AREAS IN THE WORKING AREA OF THE SIALANG BUAH HEALTH CENTER IN 2020

Edy Marjuang Purba<sup>1</sup>, Fitri Jelita<sup>1</sup>, Cristianna Simanjuntak

<sup>1</sup>STIKes Mitra Husada Medan, Medan - Indonesia

email: endypurba65@gmail.com

### ABSTRAK

**Background:** The prevalence of anemia in pregnant women at the Sialang Buah Health Center is quite high in 2019 (41.9%), 2018 (40.7%), 2017 (40.5%) and 2016 (32.3%). The prevalence of anemia among pregnant women in urban areas is still quite high (35.4%). The purpose of this study was to determine the determinants of anemia prevalence in pregnant women in Urban Areas in the working area of the Sialang Buah Health Center in 2020

**Methods:** The study is an analytic observational which is conducted to determine the determinants of anemia prevalence in pregnant women in the urban area in the working area of the Sialang Buah Community Health Center in 2020. The research sample was all pregnant women from urban areas (58 people). Hb blood levels were checked using a stick / Hb meter at the Sialang Buah Health Center. Pregnant women are declared anemic if the blood Hb level is <11gr / dl. The data collected was then analyzed univariate and bivariate.

**Results:** The results of bivariate analysis showed that there was a association between knowledge and consumption of Fe tablets with anemia in pregnant women in urban areas in the working area of the Sialang Buah Health Center in 2020. There was no association between teenage pregnancy, education, economic status and ANC visits with Fe with anemia in pregnant women in urban areas in the working area of the Sialang Buah Health Center.

**Conclusions:** It is suggested to Staffes of Sialng Buah Health Center to continue to carry out regular counseling to increase knowledge of pregnant women about anemia prevention and monitoring of Fe tablet consumption.

**Keywords:** anemia, knowledge, Fe tablet consumption, urban

### BACKGROUND

Maternal Mortality Rate and Infant Mortality Rate are indicators of successful development in the health sector. Maternal mortality rate refers to the number of maternal deaths starting from pregnancy, childbirth and childbirth. Maternal mortality and infant mortality are measures of the ability of a country's health services. WHO (2017) states that the Maternal Mortality Rate in Indonesia is quite high compared to the Maternal Mortality Rate in Southeast Asian countries such as Malaysia (29 / 100,000 live births), Thailand (48 / 100,000 KH), Vietnam (59 / 100,000 KH), and Singapore (3 / 100,000 KH). If compared with developed countries, the figures are very different, such as Australia (7 / 100,000 KH) and Japan (5 / 100,000 KH)

and one of the causes of maternal death is bleeding due to anemia.<sup>1</sup>

The results of the 2012 Indonesian Demographic and Health Survey stated that the maternal mortality rate (MMR) was 359 per 100,000 live births. The MMR is quite high and far worse than that of the poorest countries in Asia.<sup>2</sup> The 2015 Inter-Census Population Survey (SUPAS) states that MMR in Indonesia has decreased to 305 / 100,000 live births, but this is still far from the 2030 Sustainable Development Goals (SDGs) target of 70 per 100,000 live births. Based on the Indonesian Health Profile in 2018, it is stated that bleeding due to iron anemia is one of the main causes of maternal death with a proportion of 31.25%.<sup>3</sup> Anemia is a condition in which the number of red blood cells or the

concentration of oxygen carriers in the blood is insufficient.<sup>4</sup> Pregnant women are the group most prone to anemia, namely having a Hb less than 11gr / dl during pregnancy. Anemia is very dangerous for pregnancy, which can cause fetal death in the womb, abortion, and congenital abnormalities.<sup>5</sup>

The prevalence of anemia in pregnant women in Indonesia based on the 2018 RISKESDAS increased significantly from 2013 (37.1%) to 2018 (48.9%).<sup>6</sup> The prevalence of anemia in North Sumatra Province is in the range of 15 to 39%.<sup>7</sup> Anemia has become a priority health problem at the Sialang Buah Health Center in recent years. The prevalence of anemia in pregnant women at the Sialang Buah Health Center is quite high in 2019 (41.9%), 2018 (40.7%), 2017 (40.5%) and 2016 (32.3%).<sup>8</sup> The prevalence of anemia in pregnant women in urban areas is still quite high, so it needs a strategy and health program that focuses on overcoming the high prevalence of anemia in urban areas by utilizing available resources.

Anemia in pregnancy cannot be separated from the physiological changes that occur during pregnancy, the age of the fetus, and the condition of the previous pregnant woman. During pregnancy, the body will experience significant changes, the amount of blood in the body increases by about 20-30%, so it requires an increased supply of iron and vitamins to make hemoglobin (Hb). When pregnant, the mother's body makes more blood to share with her baby. The body requires up to 30% more blood than before pregnancy.<sup>9</sup>

The prevalence of anemia in 2019 in urban areas in the Sialang Buah Community Health Center is quite high, namely 35.4%. Some of the determinants that are suspected to be the cause of the high incidence of anemia are teenage pregnancy, education, knowledge, economic status, low antenatal visits and lack of maternal compliance in consuming Fe tablets. Based on the report of the Midwife Coordinator at the Sialang Buah Health Center, the proportion of

teenage pregnancies at the Sialang Buah Health Center is quite high. Some of them are pregnant at school age (Junior and High School) so that the level of knowledge and education needs to be investigated whether it also affects the incidence of anemia. The purpose of this study was to determine the determinants of anemia prevalence in pregnant women in the urban area in working area of the Sialang Buah Health Center in 2020.

## METHODS

The study is an observational analytic conducted to determine the determinants of anemia prevalence in pregnant women in the urban area in working of the Sialang Buah Health Center in 2020. The sample of this study was all pregnant women from urban areas (58 people) who made antenatal visits at the Sialang Buah Health Center. This area is used as a research location because it has a high number of anemia cases of pregnant women. The stages of this research began when the mother visited the Sialang Buah Health Center and then the pregnant women were interviewed with a questionnaire to find out their characteristics, and after that, the blood was collected from the veins. Hb blood levels were checked using a stick / Hb meter at the Sialang Buah Health Center. Pregnant women is considered anemia if the blood Hb level is <11gr / dl.

## RESULT

### Respondent Characteristics

**Table 1. Distribution of Pregnant Women Based on Characteristics**

No	Characteristics of Pregnant Women	f	%
1	<b>Teenage Pregnancy</b>		
	Yes	19	31.76
	No	39	67.24
2	<b>Education</b>		
	Low	27	46.55
	High	31	53.45
3	<b>Knowledge</b>		
	Bad	25	43.10
	Goog	33	56.90

4	<b>Economic Status</b>		
	Low	30	51.72
	High	28	48.28
5	<b>ANC Visit</b>		
	Irregular	23	39.66
	Regular	35	60.34
6	<b>Fe Tablet Consumption</b>		
	Not Enough	34	58.62
	Enough	24	41.38
	<b>Total</b>	<b>58</b>	<b>100%</b>

Based on Table 1. It can be seen that there were more respondents who were not teenage pregnancies, namely 39 people (67.76%). Based on the level of education, there were more pregnant women who had higher education levels, namely as many as 31 people (53.45%). Based on from the knowledge, there were 33 pregnant women who had good knowledge (56.90%). Based on economic status, there were more pregnant women who had low economic status, namely 30 people (51.72%). Based on from the ANC visits, more pregnant women who had regular ANC visits were 35 people (60.34%). Based on the consumption of Fe tablets, more pregnant women who consumed Fe tablets were not enough, namely as many as 34 people (58.62%).

### Prevalence of Anemia

The prevalence of anemia in pregnant women in urban areas in the working area of the Sialang Buah Health Center can be seen in the following table:

**Table 2. Distribution of Pregnant Women Based on Anemia Status in Urban Areas in the Working Area of the Siang Buah Health Center in 2020**

Anemia Status	Number (People)	%
Anemia	22	37.93
Normal	36	62.07
<b>Total</b>	<b>58</b>	<b>100,0</b>

Based on the table 2, it can be seen that the prevalence of anemia in urban areas in the working area of the Sialang

Buah Health Center is quite high, namely 37.93%. The number of pregnant women who did not get anemia was 36 (62.07%)..

### Bivariate Analysis

Bivariate analysis of several determinants with the incidence of anemia in urban areas in the working area of the Sialang Buah Health Center, Serdang Bedagai Regency can be seen in the following table:

**Table 3. Bivariate Analysis of Anemia Determinants in Pregnant Women in the Working Area of the Sialang Buah Health Center in 2020**

Variable	Anemia Status				RP (95%CI)	P-value	
	Anemia		Normal				Total
	n	%	n	%	n	%	
<b>Teenage Pregnancy</b>							
Yes	9	47.4	10	52.6	19	100.0	1.857 (0.83-3.93)
No	13	33.3	26	66.7	39	100.0	
<b>Education</b>							
Low	12	44.4	15	55.6	27	100.0	1.355 (0.65-3.47)
High	10	32.3	21	67.7	31	100.0	
<b>Knowledge</b>							
Bad	17	68.0	8	32.0	25	100.0	1.988 (1.67-4.59)
God	5	15.2	28	84.8	33	100.0	
<b>Economic Status</b>							
Low	14	46.7	16	53.3	30	100.0	0.966 (0.47-2.93)
High	8	28.6	20	71.4	28	100.0	
<b>ANC Visit</b>							
Irregular	12	52.2	11	47.8	23	100.0	1.711 (0.85-3.16)
Regular	10	28.6	25	71.4	35	100.0	
<b>Fe Tablet Consumption</b>							
Not Enough	19	55.9	14	41.1	34	100.0	2.481 (1.51-5.37)
Enough	3	12.5	21	87.5	24	100.0	

Based on the results of the bivariate analysis, it can be seen that there is a association between knowledge, Fe tablet consumption and anemia in pregnant women in urban areas in the working area of the Sialang Buah Health Center in 2020. From the results of the bivariate analysis it is also known that there is no association between adolescent pregnancy, education, economic status and ANC visits with anemia in pregnant women in urban areas in the working area of the Sialang Buah Health Center in 2020.

## DISCUSSION

The characteristics of pregnant women who were respondents in this study in the urban area in working area of the Sialang Buah Community Health Center, Serdang Bedagai Regency were that 19 people with status teenage pregnancy (67.76%), more pregnant women who had a high level of education, namely 31 people (53.45), more pregnant women who have good knowledge, namely as many as 33 people (56.90%), more pregnant women who have low economic status as many as 30 people (51.72%), more pregnant women 35 people (60.34) had regular ANC visits, and 34 people who consumed inadequate Fe tablets were more than 34 people (58.62%). The prevalence of anemia in urban areas in the work area of the Sialang Buah Puskesmas is quite high namely 37.93%. The results of the bivariate analysis stated that there was a relationship between knowledge of Fe tablet consumption and anemia in pregnant women in urban areas in the work area of the Sialang Buah Community Health Center in 2020. This means that the determinant of anemia prevalence in urban areas in the working area of the Sialang Buah Health Center is low knowledge and insufficient consumption of Fe tablets.

From this research it can be concluded that the lower the person's knowledge, the higher the risk of pregnant women for anemia. Change in practice which is also called open change due to a certain stimulus, is preceded by closed changes, namely changes in knowledge, then changes in attitudes, then changes in practice. This also applies to the practice or behavior of preventing anemia from pregnancy to delivery.<sup>10</sup>

Consuming iron tablets irregularly and insufficiently can result in inability to absorb iron optimally. Iron consumption should not be stopped after hemoglobin reaches normal values, but should be continued for another 2-3 months to restore iron stores. Giving iron for 2-3 months after hemoglobin becomes normal, what is

important in iron treatment is that it is continued until the peripheral blood morphology is normal and iron reserves in the body are fulfilled. Prior to treatment, the amount of iron needed must be calculated.<sup>11</sup>

Consuming Fe tablets in insufficient amounts will have an impact on the effectiveness of increasing red blood cells which is not optimal. Even though this Hb level can be improved by consuming blood booster tablets that have been given by health workers. Provision of Fe tablets as much as 90 grains during pregnancy is actually sufficient to meet the iron needs of pregnant women and fetuses. In an effort to improve the behavior of pregnant women in consuming Fe tablets, it is necessary to carry out continuous health education, such as in the class of pregnant women, screening or detection of pregnant women to monitor consumption of Fe tablets by involving health cadres.<sup>12</sup>

## CONCLUSIONS

The prevalence of anemia in urban areas in the working area of the Sialang Buah Health Center is quite high, namely 37.93%. More respondents in this study did not experience adolescent pregnancy, more had higher education levels, more had good knowledge, more had low economic status, more had regular ANC visits, and more consumed Fe tablets. not enough. The determinants of anemia prevalence in urban areas in the working area of the Sialang Buah Health Center are low knowledge and insufficient consumption of Fe tablets. Immediate treatment and follow-up is needed for pregnant women who are caught with anemia so that the anemia does not get worse. For the staffs of Sialng Buah Health Center, it is hoped that they will continue to carry out periodic counseling to increase the knowledge of pregnant women about the prevention of anemia and monitoring of consumption of Fe tablets.

**REERENCES**

1. WHO. (2017). *The Global Prevalance of Anemia in 2017*.  
<https://www.who.int/health-topics/anaemia>
2. BKKBN, BPS, & Kemenkes RI. (2013). *Survei Demografi dan Kesehatan Indonesia 2012*. Jakarta.
3. Kemenkes RI. (2018). *Profil Kesehatan Indonesia Tahun 2018*. Jakarta : Kemenkes RI
4. Obse N, Mossie A, Gobena T. (2014). Magnitude of Anemia and Associated Risk Factors among Pregnant Women Atteending, Antenatal Care in Shalla, Woreda, West Arsi Zone, Oromia Region Zone, Ethopia. Original Article. *BMJ*.165-171.
5. Seri LA. (2013). *Buku Saku Anemia Defisisensi Besi Masa Prahamil Dan Hamil*. Jakarta: Penerbit Buku Kedokteran EGC
6. Badan Penelitian dan Pengembangan Kesehatan Kemenkes RI. (2018). *Riset Kesehatan Dasar 2018*. Jakarta.
7. Dinas Kesehatan Provinsi Sumatera Utara. (2019). *Profil Kesehatan Provinsi Sumatera Utara 2018*. Medan
8. Puskesmas Sialang Buah. (2018). *Profil Puskesmas Sialang Buah Tahun 2017*. Kecamatan Teluk Mengkudu
9. Manuaba, I. G. D. (2012). *Ilmu kebidanan, penyakit kandungan dan keluarga berencana*. Jakarta. EGC.
10. Notoatmodjo, S. (2012). *Pendidikan dan perilaku Kesehatan*. Jakarta: Rineka Cipta.
11. Wintrobe. (2017). *The Aproach to The Patient With Anemia*, Philadelphia: Clinical Hematologi, Ed. Lea & Febinger.
12. Wiknjosastro, H. (2015). *Ilmu Kebidanan* (Edisi ke-4). Jakarta: Yayasan Bina Pustaka Sarwono Prawirohardjo.