



Estimation of fetal weight (EFW) with hemoglobin levels during pregnancy at Pagar Dewa-West Lampung Province of Lampung[☆]



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KEYWORDS

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Abstract

Objective: To know the relation between estimation of fetal weight with hemoglobin levels during pregnancy at Public Health Service (*Puskesmas*) Pagar Dewa-West Lampung, Province of Lampung.

Method: Quantitative research type with cross sectional approach. The population in this study was all pregnant women at West Lampung area with a number of 70 respondents as total sampling technique. All respondents were be measured the levels of hemoglobin and Estimation of fetal weight. The statistical test used Chi Square test.

Result: The hemoglobin level of 70 respondents identified with category of anemia of 38 (54.3%) respondents and unanemia 32 (45.7%) respondents. Estimation of fetal weight found 40 (57.1%) respondents have a fetal weight in incompatible category with gestational age and 30 (42.9%) respondents had fetal weight in compatible category with gestational age, with *p*-value 0.000 (<0.05).

Conclusion: There was a correlation between estimation of fetal weight with hemoglobin levels during pregnancy at Public Health Service (*Puskesmas*) Pagar Dewa-West Lampung, Province of Lampung, with OR 8.250 which means that respondents who have low of hemoglobin (anemia) would be predicted eight times the risk of having estimation fetal weight incompatible with gestational age. Suggestions are expecting to increase awareness of pregnant women about the importance of routine pregnancy examination, as well as routinely consume Fe tablets and pay attention to nutritional intake during pregnancy.

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Introduction

The incidence of anemia especially in pregnant woman in industrialized and developing countries is still quiet high. Reported by WHO in 2012 in developing countries who are suffering from anemia by 35–75% and an average of 56% in industrialized countries. However, most of the pregnant women who had anemia started from pre-pregnancy, with comparisons prevalence between pregnant and unpregnant such as 43% and 12%. Province of Lampung has a highest number comparing other province in Sumatra Island.^{1,4} Reported in 15 Public health Service (*Puskesmas*) at west Lampung; Sumber Jaya 48 (23.5%), Bungin 56 (29.6%) Taman Cane 43 (33.6%), Fajar Bulan 38 (33.6%), Sekincau 49, (33.5%), Pagar Dewa 63 (43.5%), Batu Ketulis 50, (29.2%), Kenali 49 (21.7%), Bandar Negri Suoh 51 (24.5%), Srimulyono 48 (26.5%), Batu Brak 51 (28.5%), Liwa 60 (39.9%), Buy Nyerupa 40 (29.7%) and Lombok 40 (44.3%).²

Based on these data it is known that the prevalence of anemia at Public Health Service (*Puskesmas*) Pagar Dewa Health Center is the highest number compared to other public health services. Following that conditions in this year found postpartum hemorrhages has 4 cases and very low birth weight newborn has 4 cases.

The purpose of this study to know the relation between estimation of fetal weight with hemoglobin levels during pregnancy at Public Health Service (*Puskesmas*) Pagar Dewa-West Lampung, Province of Lampung.

Methods

Quantitative research type with cross sectional approach. The population in this study was all pregnant women at Public Health Service (*Puskesmas*) Pagar Dewa-West Lampung with a number of 70 respondents as total sampling technique. All respondents were be measured the levels of hemoglobin and Estimation of fetal weight. The statistical test used Chi Square test.

Results

Levels of hemoglobin of 70 respondents in anemia category of 38 (54.3%) respondents and unanemia 32 (45.7%) respondents (table 1). Estimation of fetal weight (EFW) of 70 respondents, in incompatible category of 40 (57.1%) respondents and compatible of 30 (42.9%) respondents with gestational age (table 2). The result of Chi Square statistic test obtained *p*-value 0.000 (<0.05) (Table 3).

Table 1 Distribution of frequency of hemoglobin levels in pregnant women.

Level of Hb	Total	Percentage (%)
Anemia	38	54.3
Unanemia	32	45.7
Total	70	100

Table 2 Distribution of frequency of estimation of fetal weight (EFW) with gestational age.

Estimation of fetal weight (EFW)	Total	Percentage (%)
Incompatible	40	57.1
Compatible	30	42.9
Total	70	100

Discussion

Chi Square statistical test results obtained *p*-value 0.000 (<0.05), this means that there was a correlation between estimation of fetal weight with hemoglobin levels during pregnancy at Public Health Service (*Puskesmas*) Pagar Dewa-West Lampung, Province of Lampung, with OR 8.250 which means that respondents who have low of hemoglobin (anemia) would be predicted eight times the risk of having fetal weight incompatible with gestational age.

Hemoglobin is composed of heme and protein globin elements, one of the heme forming components is iron (Fe). Iron is naturally obtained from food, can come from animals or plants. Iron from plants (non-heme) has a absorption capacity of 1–6%, lower than iron derived from animals (heme) which is 7–22%.³

Estimation of fetal weight with hemoglobin levels during pregnancy is a useful way to overcome the problem of pain and death during childbirth. The states that birth weight will affect the accuracy of labor delivery and its results so that it is expected to reduce mortality and pain in childbirth.⁶ The pregnancy is an important of early life period. At that time the mother must prepare herself well to accept the birth of her baby. A healthy mother is expecting to have a healthy baby. One factor that influences maternal health is maternal nutrition. In addition to finding his own body’s needs, various nutrients are also needed for the growth and development of the fetus in the womb, because nutritional

Table 3 Correlations between estimation of fetal weight (EFW) and hemoglobin levels in pregnant women.

Level of Hb	Estimation of fetal weigh				Total		<i>p</i> value	OR
	Incompatible		Compatible		N	%		
	N	%	N	%				
Anemia	30	42.9	8	11.4	38	54.3	0.000	8.250 (2.801–24.300)
Unanemia	10	14.3	22	31.4	32	45.7		
Total	40	57.2	30	42.8	70	100		

deficiency during pregnancy can have an adverse effect on the mother and child. Nutritional status of pregnant women greatly affects fetal growth in the uterus.⁵

In this study was finding 8 respondents with a history of anemia and gestational age/atheremic age (30–38 weeks) and having estimation fetal weight compatible with gestational age. That condition possibility when she was checked of hemoglobin in unfit due to tired and lack of rest.

10 respondents in normal levels of hemoglobin and estimation of fetal weight in incompatible category. It is caused gestational age is still young (29–33 weeks) at 29–30 weeks of pregnancy the fetus has not entered pelvic inlet and the size of the fetus is still relatively short, which is around 2300–2700 g, whereas at 33 weeks' gestation, anemic unappear. It can be caused by inadequate maternal nutrition, thus affecting fetal growth, the fetus in the uterus can obtain nutrients for growth and development through the mother, so if the mother experience poor nutritional status during pregnancy, can be discovered that fetal growth is also affected.

Conclusion

In summary, there was a correlation between estimation of fetal weight with hemoglobin levels during pregnancy at Public Health Service (*Puskesmas*) Pagar Dewa-West

Lampung, Province of Lampung. Improving health services for pregnant women by health workers.

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