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Study Of Most Affected Age Group of Anemia Among Pregnant Women Attending At El-Nuhud Teaching Hospital, West Kordufan State, 2019.

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Abstract: ***Background:*** Anemia is a common problem in Africa, with prevalence ranging from 21.1% to 64.4%. According to WHO estimates, 56 million pregnant women were anemic in 2005, more than half of them (57.6%) would be in Africa.
Objectives: The main objective of this study to determine the most affected age group of anemia among pregnant women attending at El-Nuhud Teaching Hospital, West Kordufan State, 2019.
Methodology: A cross-sectional descriptive hospital based study was carried out from August to November 2019. The sample size was total coverage of all pregnant women attending at El-Nuhud Teaching Hospital, West Kordufan State. A number of 420 samples of data of structured administrated questionnaire and blood samples were collected from pregnant women. The blood samples were collected and investigated by laboratory technician by using Colorimeter to measure hemoglobin level. The data were analyzed by using Statistical Package for Social Science (SPSS), version 20and Chi-Square test (X2) used to check difference between variables, p value less than 0.05 was considered significant.
Results: The results indicated the high affected in illiteracy (77.6%) followed by primary (57.1%), Khalwa (50%), secondary (42.8%), university (26.7%) and post university (0%).This significant relation between educational level for pregnant woman and anemia among pregnant women, (p value = 0.000)..
Conclusion: The study concluded that the prevalence of anemia among pregnant women was more than half. The study recommended to implement health education programmes at all levels, use appropriate vaccinations, supplementations and vitamins during pregnancy to prevent anemia, family planning, optimum maternal and child health, and environmental Sanitation.

INTRODUCTION

Anemia is common in both developing and industrialized nations. Itaffects about two billion people worldwide, i.e 30% of the inhabitants of the planet, according to data from the World Health Organization (WHO). Hence it is considered a public health problem. It greatly affects a person's life, especially in its more severe forms. Anemia cause tiredness, weakness, malaise, and making routine tasks more difficult and painful. Anemia is a common problem in Africa, with prevalence ranging from 21.1% to64.4%. It has significant impact on morbidity and mortality. The affected person may be drowsy, with less resistance to physical activities and deterioration in cognitive function and immunity(Omer and Ahmed, 2015).
Anemia defined as low blood hemoglobin concentration has shown to be public health problem that affects low, middle and high income countries and has significant adverse impacts on social and economic development (WHO, 2015). Globally anemia affects 32.4 million (38.4%) of pregnant women itis major public health problem in South Asia (48.7%) and Africa (46.3%) (Tadesse et al., 2017).

Pregnant woman's anemia is a critical issue of public health due to its frequency, multi factorial nature and impact on pregnancy evolution. According to WHO estimates, 56 million pregnant women were anemic in 2005, more than half of them (57.1%)would be in Africa .It contributes to the 20% of maternal deaths related to indirect causes (Salifouk et al., 2014). Anemia of pregnancy an important risk factor for fetal and maternal morbidity is considered a global health problem affecting almost 50% of pregnant women (Maureen and Anat, 2016). Anemia is one of nutritional insufficiency disorder and affecting in Ethiopia the prevalence of anemia using a cut off level hemoglobin less than 11g/dl (33% haematocrit) was 23.5% (72/ 306) (Zekarias et al.,2017).In Africa the prevalence rate of anemia among antenatal women range from 35% to 72% while in Asia 37% to 75% (Kumariet al,2017). Anemia is a global public health problem, but is more prevalent in pregnant women and young as stated by WHO (2015).Anemia among pregnant women worldwide was 38% and Sudan among countries considered with a moderate type of anemia during pregnancy (Alamin and Taha, 2016).

In a cross – sectional study was conducted among pregnant women in Erbil city. The result of the study was showed the prevalence of manemia among pregnant women 46.2% (Abdulwahid and Ahmed,2017). In India anemia is the second most common cause and accounting for 20% of total maternal, the prevalence of anemia ranges from 33% to 89% among pregnant women and is more than women from 60% among adolescent girls with wide variations indifferent regions of countries (Rajamouli j et al., 2016). In fact over20% of pregnant women in Europe are anemic during pregnancy (Colman and Pavord, 2017). The United Kingdom prevalence of maternal anemia in the antenatal period was estimated as 24 % in a recent cross sectional study (Rukuni et al., 2015).

JUSTIFICATIONS AND PROBLEM STATE

Anemia is most common medical disorder in pregnancy and postpartum period (Elnazir, 2015). Anemia in pregnancy is an important health issue resulting in high maternal morbidity and mortality (Anlaakuu and Anto, 2017). The World Health Organization (WHO) has estimated that prevalence of anemia in pregnant women was found 14% in developed, 50% in developing countries and 60-75% in India .This study conducted among pregnant women attending at ElNuhud Teaching Hospital -West Kordufan State in Sudan to determine the most affected age group with anemia the daily frequency of pregnant women who attending hospital about (10-15) pregnant women and monthly about (300-450) pregnant women(El-Nuhud Teaching Hospital, 2018).Prevalence of anemia in females was higher in most regions andage groups South Asia and Central, West and East Sub-Saharan Africa had the highest burden, while East, Southeast and South Asiasaw the greatest reduction (Namazi, 2018).

Study of pregnant Sudanese women attended delivery in River Nile State Sudan the study revealed that (64.3%) of study population were anemic (Elnazir, 2015).Study carried out in Ethiopia among pregnant women revealed that (34.6%) were anemic (Nega et al., 2015).

Surveys in different parts of India indicate that about 50-60% of women belonging to low socio-economic group are anemic in last trimester of pregnancy (Park, 2015).
Objective:

To determine the most affected age group of anemia among pregnant women attending at El Nuhud Teaching Hospital, West Kordufan State, Sudan-2019

MATERIAL & METHOD

Study design: A descriptive cross sectional hospital based study. Study area: El-Nuhud Teaching Hospital, West Kordufan State, Sudan.

Location: Study conducted at El-Nuhud Teaching Hospital, West Kordufan State - Sudan, 2019.El-Nuhud locality located between latitude 9.25-16.3o North and latitude 27-32o East it surrounded by many areas in the East Alkhewi locality and Abuzabad locality, in the West Wadbanda locality and in the South South Kordufan State (West Kordufan University, 2018).

Building: El-Nuhud Teaching Hospital building were from stablematerial such as bricks and stone (El-Nuhud Teaching Hospital, 2019).

Health services: Regarding to health services there are 2governmental hospitals, 6 health centers, 12 private dispensaries and 8 private clinic (El-Nuhud locality, 2018).

Education services: Education services in El-Nuhud locality include basic; higher secondary schools and universities; 194 basic,15 higher secondary schools and two universities (Education office,2018).

Study population: All pregnant women attending at El-Nuhud Teaching Hospital that fulfill the inclusion criteria during the data collection period was considered as study participants. The number population (327051) persons in El-Nuhud locality, (192961) of them as women, (78819) as age reproductive women and (13115) as pregnant women (Ministry of Health, West Kordufan State Records, 2019).

Sample size: The sample size was determined by total coverage of pregnant women attending at El-Nuhud Teaching Hospital –West Kordufan State during three months (August - November 2019) to obtained 420 pregnant.

Methodology: Data collected using following tools:

Questionnaire: In the form of administrated questionnaire filled by pregnant women attending at El-Nuhud Teaching Hospital, West Kordufan State. The questionnaire includes the following variables:-Socio-demographic factors (age, educational status, her husband education, her occupation, her husband occupation, family size, Gestation period and income).

Laboratory investigation: Hemoglobin level determined using Colorimeter hemoglobin and all laboratory investigations were done by technician's laboratory. Pregnant women was considered anemic when her hemoglobin less than 11gm/dl according (WHO).

Data analysis: Data entered and analyzed by using computer-based operation practically (Statistic Package for Social Science) version20 and Chi - Square test (x2) was used to check the differences between variables. The (P.value) less than 0.05 considered significant.

Ethnical consideration: Permission was taken from the pregnant women with her full consent and permission was obtained from the Ministry of Health, West Kordufan State, also permission was taken from the Hospital Medical Manger as well as an ethnical approval from the Department of Epidemiology, Faculty of Public and Environmental Health, University of Khartoum.

RESULTS

Table (1): Educational level among pregnant women in relation to anemia at El-Nuhud Teaching Hospital, West Kordufan State, 2019.

(n= 420)

Anemia / Educational level	Positive		Negative		Total	
	N	%	N	%	N	%
Illiteracy	132	77.6	38	22.4	170	40.5
Khalwa	1	50	1	50	2	0.4
Primary	92	57.1	69	42.9	161	38.4
Secondary	24	42.8	32	57.2	56	13.3
University	8	26.7	22	73.3	30	7.2
Post university	0	0	1	100	1	0.2
Total	257	61	163	39	420	100

X2= 45.163 p = 0.000

Table (1) shows high affected in illiteracy (77.6%) followed by primary (57.1%), Khalwa (50%), secondary (42.8%), university (26.7%) and post university (0%).This significant relation between educational level for pregnant woman and anemia among pregnant women, (p value = 0.000).

Table (2): Pregnant woman's job among pregnant women in relation to anemia at El-Nuhud Teaching Hospital, West Kordufan State, 2019..

(n = 420)

Anemia / Her job	Positive		Negative		Total	
	N	%	N	%	N	%
Housewife	241	62.6	144	37.4	385	91.7
Worker	15	60	10	40	25	6
Professional	1	10	9	90	10	2.3
Total	257	61	163	39	420	100

X2 = 11.370 p= 0.003

Table (2) shows high affected with housewife (62.6%) followed by worker (60%) and professional (10%).This significant relation between pregnant women's job and anemia among pregnant women, (p value = 0.003).

Table (3): Gestation period among pregnant women in relation to anemia at El-Nuhud Teaching Hospital, West Kordufan State, 2019.

(n=420):

Anemia / Gestation period (months)	Positive		Negative		Total	
	N	%	N	%	N	%
First trimester (1-3 month)	16	45.7	19	54.3	135	8.3
Second trimester (4-6 month)	58	50	58	50	116	27.6
Third trimester (7 – 9 month)	183	68	86	32	269	64.1
Total	257	61	163	39	420	100

X2 = 14.945 p= 0.001

Table(3): shows high affected in third trimester 7-9 months (68%)followed by second trimester 4-6 months (50%) and first trimester 1-3 months (45.7%).This significant relation between gestation period and anemia among pregnant women, (p value = 0.001).

DISCUSSION

This a cross-sectional descriptive hospital based study was conducted at El-Nuhud Teaching, West Kordufan State with an objective to study the prevalence of anemia among pregnant women in period (August- November) 2019.

This study shows that (77.6%), (57.1%), (50%), (42.8%) and (26.7%) anemic of pregnant women's educational level, (illiteracy, primary, Khalwa, secondary and university) respectively, a significant associated between pregnant women's educational level and anemia (p value = 0.000) and this similar with study of (Nwizu, 2o11) he revealed that had statistically association with low education attainment and anemia among pregnant women (p value = 0.006), and also agree with study of (Jufar and Zewde, 2014) they revealed had significant association between education status and anemia in pregnancy, (p value = 0.037).

The study shows that statistically significant association between her husband's educational level and anemia in pregnancy, (p value = 0.000) and this agree with study of (Krupp et al, 2018) they revealed anemia in pregnant

women was associated with lower education among spouses (p value = 0.021).

This study shows that (61.6%), (60%) and (10%) anemic of pregnant women's job, (housewife, worker and professional) respectively, statistically significant between pregnant women's job and anemia in pregnancy, (p value = 0.003), this similar with study of (Krupp et al, 2018) they carried out anemia in pregnancy was associated with lower household income (p value = 0.022).

This study shows that (68%), (50%) and (45.7%) anemic of pregnant women their gestation period (7-9 months), (4-6 months) and (1-3 months) respectively, a significant associated between gestation period and anemia among pregnant women (p value = 0.001) and this similar with study of (Selim et al., 2017) they revealed that had statistically significant association with gestation period and in pregnancy, (p value = 0.001), also similar with study of (Khan et al, 218) they revealed significantly associated between gestation period and anemia in pregnancy (p value < 0.05), also agree with the study of (Melku et al., 2014) they revealed that anemia was high at third trimester (18.9%), also similar with the study of (Jufar and Zewde, 2014) they revealed had significant associated between gestation period (third trimester, p value = 0.041) and anemia in pregnancy and similar with the study of (Alene and Dohe, 2014) they carried out pregnant women in the third and second trimesters were 3.32 times more likely to be 58 affected by anemia as compared to pregnant women in the first trimester.

CONCLUSIONS

This a cross- sectional descriptive hospital based study was conducted with an objective to study prevalence of anemia among pregnant women attending at El-Nuhud Teaching Hospital, West Kordufan State, 2019.
The prevalence among pregnant women (61%).
The most affected age group was more than 45years old (100%).

The more causes associated with anemia among pregnant women were age group, family size, latrine inside house, pregnant women's educational level, her husband educational level, pregnant women's job, gestation period, parity, stillbirth history, abortion history, complication during pregnancy, problem health, meals per day poultry eggs intake, fruits and vegetables intake, follow up during pregnancy and folic acid and iron intake during pregnancy.

RECOMMENDATION

1. Implementation of health education programmes at all levels, especially nutritional education to change dietary habits and feeding practices.
2. Provision adequate of quality and quantity of nutrients and food during pregnancy
3. Encourage family planning
4. Provision universal, perfect, affordable and accessible antenatal care services.

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