ANEMIA AND ITS ASSOCIATED FACTORS AMONG PREGNANT WOMEN ATTENDING ANTENATAL CARE AT JANAKPUR ZONAL HOSPITAL, JANAKPUR, DHANUSHA NEPAL

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Background

- Anemia is one of the most common nutritional deficiency diseases that disproportionately affect children under five years of age and pregnant women[1].
- The cause of anemia has been known to be multifactorial[1].
- Globally, about four in ten pregnant women are anemic. Anemia during pregnancy contributes to one fifth of all maternal deaths worldwide and increases the risks of birth complications, poor pregnancy outcome and fetal, neonatal and overall infant mortality[2].
- Nepal has one of the highest prevalence (46%) of anemia among pregnant women and similar to other developing countries[3].
- There is little information regarding anemia in the study area of Janakpur that is located in the province with highest anemia prevalence of anemia.

Objective

The objectives of this study were "To identify the status of anemia and its associated factors among pregnant women attending antenatal care in Janakpur zonal hospital Dhanusha, Nepal.

Methodology

- The study was hospital based descriptive cross-sectional, conducted at Janakpur zonal hospital, Dhanusha Nepal from November to December 2017.
- Total 292 sample size was considered for the study. Pregnant women who attended ANC at the hospital were interviewed until the desired sample size was met.
- Hemoglobin level was determined from venous blood sample using cyanmethemoglobin method.
- A cut-off of less than 11gm/dl hemoglobin was used to define anemia[1], Consumed 4 and less food groups was defined as inadequate dietary diversity[4].
- Dietary pattern was assessed using tailored food frequency questionnaire and dietary diversity was assessed using FAO's Minimum Dietary Diversity guide for Women[4].
- Binary logistic regression was used to identify associations between predictor variables and anemia
- All analyses were conducted with Epi-Data 3.1 version and analyzed using IBM SPSS 23.0 version.

Results

- The mean age of the pregnant women was 22.6±3.92 years.
- Majority of the women were Madhesi (64%) followed by terai Dalit (18.8%) and Muslim (9.6%).Most of the women (89.7%) were housewives.
- The prevalence of anemia among the pregnant women was 65.7%
- Adequate dietary diversity was maintained by 69.9% of the pregnant women.Only28.8% had completed their ANC visits. About 88.1% of the women had consumed iron folic acid tablets and 81.8% had consumed albendazole tablets.
- Regression analysis showed that anemia was associated with ethnicity, deworming status, antenatal visits and dietary diversity.
- Dalit women were 4 times more likely than Non-Dalit women to be anemic.(AOR4.27, 1.31-13.91).Women who did not consume albendazole tablets were also 4 times more likely to be anemic than those who consumed the tablets(AOR 3.96, 1.48-10.50). Similarly, women who did not complete their 4 ANC visits were 2 times more likely to be anemic than women who completed all visits (AOR 2.23, 1.19-4.20). Lastly women who had inadequate dietary diversity were more than 3 times more likely to be anemic than women who had adequate diversity. *(see table 1)*

Table 1 Descriptive statistics and multivariate analysis output. (n=292)

Variables	Beta Coeff.	S.E.	Crude OR	95% CI	Adjusted OR	95%CI
Education of respondent						
Illiterate	0.05	0.61	3.99	1.63-9.79	1.06	0.32-3.48
Literate			Ref		Ref	
Education of husband						
Illiterate	-0.25	0.69	3.80	1.43-10.09	0.78	0.20-3.00
Literate			Ref		Ref	
Ethnicity						
Terai Dalit	1.45	0.60	6.69	2.57-17.39	4.27*	1.31-13.91
Non Dalit			Ref		Ref	
Religion						
Muslim	1.11	0.69	4.84	1.42-16.45	3.06	0.79-11.81
Hindu			Ref		Ref	
Residence						
Rural	0.19	0.39	2.22	1.19-4.11	1.21	0.57-2.57
Urban			Ref		Ref	
Occupation of husband						
Foreign employment	0.53	0.37	2.71	1.47-5.02	1.70	0.83-3.50
Labor	1.06	0.72	7.01	2.01-24.48	2.90	0.71-11.89
Job	-0.93	0.41	0.27	0.13-0.57	0.39	0.18-0.89
Self employed			Ref		Ref	
Gravida						
Multigravida	-0.07	1.02	2.13	1.20-3.48	0.932	0.13-6.91
Primi gravida			Ref		Ref	
Consumption of IFA						
No	0.56	0.57	2.79	1.12-6.96	1.75	0.58-5.29
Yes			Ref		Ref	
Deworming						
No	1.38	0.50	4.19	1.81-9.66	3.96*	1.48-10.57
Yes			Ref		Ref	
ANC visits						
<4 times	0.80	0.32	3.21	1.89-5.44	2.23*	1.19-4.20
≥4 times			Ref		Ref	
Dietary Diversity						
Inadequate	1.26	0.46	8.22	3.77-17.88	3.54*	1.43-8.76
Adequate			Ref.		Ref	
Constant	-0.70	1.12			0.50	

* indicates statistical significance whereas Ref denotes reference variable for the comparison

Results
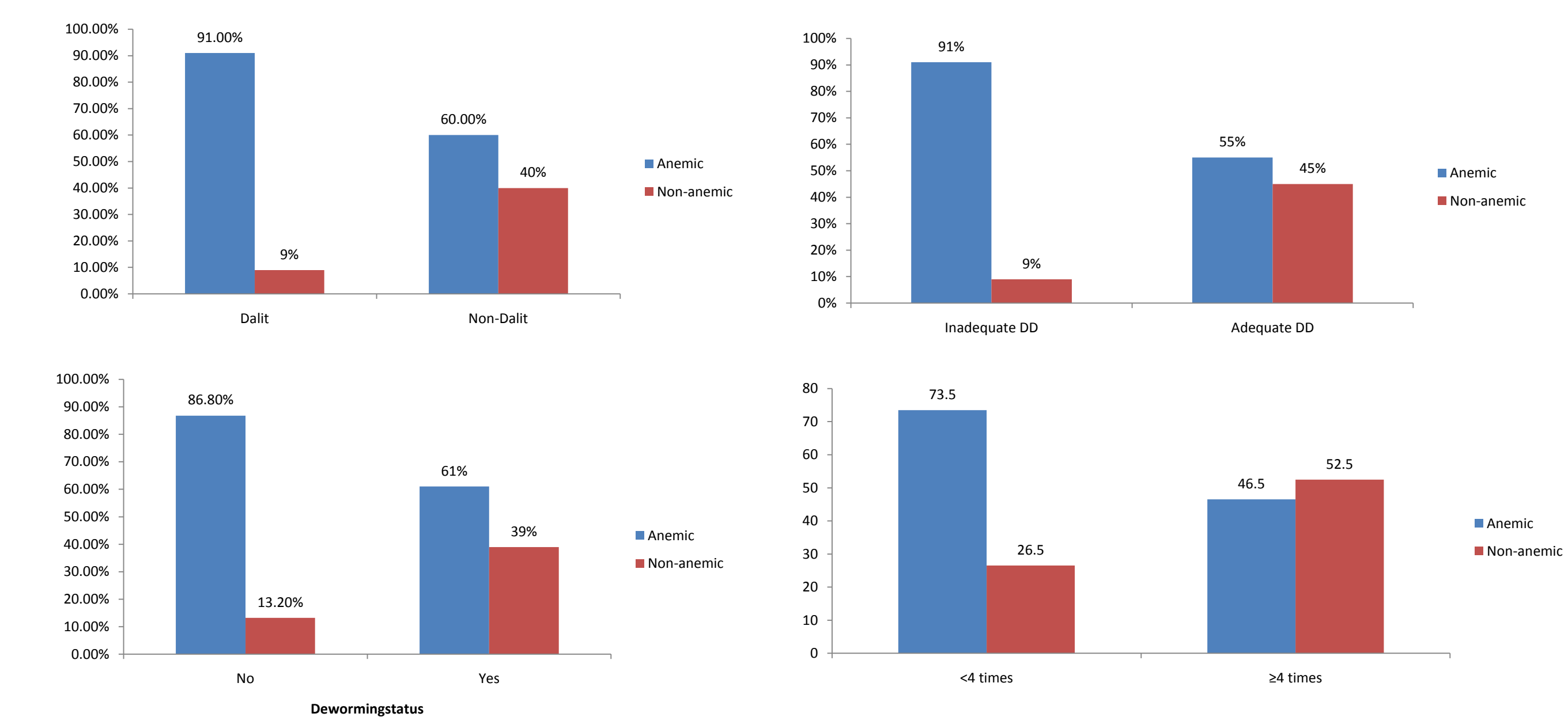
Conclusion

- About two in three pregnant women in the study were anemic.
- Women from disadvantaged Dalit community were found to be more vulnerable than their Non-Dalit counterpart.
- The finding highlights the importance of further improving the coverage of the deworming program and antenatal visits at the community level for combating anemia. The findings also suggest that promoting a diverse diet at household level could help reduce anemia among pregnant women. Further research is required to understand and confirm these interactions in order to design effective strategy and interventions.

Figure 2 Interview with pregnant women

References:

1.Organization WHO. Haemoglobin concentrations for the diagnosis of anemia and assessment of severity (WHO/NMH/NHD/MNM/11.1).Geneva: Vitamin and Mineral Nutrition Information System. 2011.
2 Organization WHO. The global prevalence of anemia in 2011.Geneva; . 2015
3 Ministry of Health and Population (MOHP) NE, and ICF International. Nepal Demographic and Health Survey 2016. Kathmandu, Nepal. 2017
4. Food and Agriculture Organization F. Minimum dietary diversity for women: a guide for measurement. Rome (Italy): FAO. 2016