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Identification of anemia and its associated factors among tribal antenatal women in a selected community of West Bengal

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Abstract
Anemia is a condition in which the hemoglobin level is below normal and insufficient to meet physiologic needs. Maternal anemia is a burning problem and most common medical disorder among micronutrients that affects health, education, economy, and productivity of the entire nation.
AIM: The aim of the study was to identify the level of anemia among tribal antenatal women and find out the associated factors of anemia among tribal antenatal women.
Objectives: 1.To identify the level of anemia among tribal antenatal women.2.To find out the associated factors of anemia among tribal antenatal women.3.To determine the association between anemia and selected demographical variables.
Methodology: 200 tribal antenatal women from Baghmundih,Purulia, west Bengal were selected by using non-probability convenience sampling technique.
Result: Most (80.5%) of the respondents were suffering from anaemia and only 19.5% tribal antenatal women had normal haemoglobin level.

Keywords: Level of anemia, tribal antenatal women, tribal antenatal women, associated factors, demographical variables

Introduction

Anemia is a condition in which the hemoglobin level is below normal and insufficient to meet physiologic needs. The World Health Organization (WHO) estimates anemia as a major public health problem with almost 2 billion people having anemia below normal values. One of the most common causes of anemia is due to inadequate supply of nutrients. Poor eating habits play a major role in the development of iron deficiency anemia that is an important indicator of poor health status. Maternal Haemoglobin level have been related to perinatal and neonatal mortality. Unfavorable socio demographic factors are the major obstacles in preventing and treating anemia, inspite of the availability of effective low cost iron and folic acid interventions. Maternal anemia is a burning public health problem and most commonly encountered medical disorder in pregnancy.

Need of the study: Maternal mortality is an important measure of women health and is good indicator of the performance of the health care system. In India anaemia attending pregnancy is aggravated by increasing requirements during pregnancy and blood loss during delivery. Due to lack of awareness people do not utilize the facility available. Socio-demographic factors like literacy, religion, caste, type of family, occupation are the major obstacles for the prevention of anaemia during pregnancy. Thus the urgent need to identify anemia and its risk factors among the hilly tribal antenatal women. Therefore this community based study has done as a brighter side to prevent anaemia among the hilly tribal antenatal women residing in Purulia, West Bengal, which will help in planning future intervention.

Problem Statement

Identification of anemia and its associated factors among tribal antenatal women in a selected community of west Bengal.

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Objectives of the study
1. To identify the level of anemia among tribal antenatal women.
2. To find out the associated factors of anemia among tribal antenatal women.
3. To determine the association between anemia and selected demographical variables.

Delimitation
The present study is delimited to antenatal women
- Who are available and willing to participate in this study?
- Can understand only Bengali.

Methodology: Research approach: Survey approach was considered to be appropriate for the present study.

Research design: Keeping the objectives of the study in mind, the descriptive survey approach was adopted for the present study.

Setting of the study
Final study was conducted at Bagmundih Block, Purulia Distict, and West Bengal.

Target Population
All antenatal women residing at tribal community.

Sample: Antenatal women residing selected tribal community of Purulia District, West Bengal.

Sample size: 200 tribal antenatal women.

Sampling Technique
Sample was selected by non-probability convenience sampling technique.

Variable under study
Research variables
- Anemia among tribal antenatal women.
- Factors associated with anemia.

Demographic variables
Demographic variables - age in year, educational status, occupation, religion, type of family, monthly family income.

Description of the tool: Three tools were used for the present study, Tool I, Tool II and Tool III.
Tool I: It was developed to collect data for estimation of heamoglobin level of antenatal women by haemoglobin colour scale. It consist of four items- absence of anaemia >11gm/dl, mild anemia 10-11, moderate anaemia 7 -9.9 gm/dl and severe anaemia < 7 gm/dl.

Tool II: The semi structured interview schedule was developed to collect the demographic data of tribal antenatal women. It describe the demographic criteria of samples consisting of 5 items like age (in years), religion, and number of family member, monthly family income and family type.

Tool III: Semi-structured interview schedule was developed and used to collect data regarding associated factors of anaemia. It has four parts.

Part A: It consists of three items on BG Prasad socio economic status scale, education status and occupation of tribal antenatal women.

Part B: It consists of items regarding obstetric and gynecological factors of respondents. It has 8 items on duration of menstrual cycle, nature of flow during menstruation, age at marriage (in years), age at the time of first pregnancy (in years), gravida, gestational age (in weeks), age of last child,

Part C: It consists of items on medical and surgical history of tribal antenatal women. There are total 3 items on past medical illness, present medical illness, history of surgery occur in past.

Part D: It is regarding dietary habits of the respondents. It consists of total 9 items. They are meal frequency /day, frequency of taking fruit, frequency of taking meat, frequency of taking egg, intake of iron and vitamin C containing food, habit of drinking tea or coffee, misconception regarding foods, history of IFA tablets intake and any history of discontinuation during IFA tablets intake.

Data analysis and discussion: Section I Findings related to heamoglobin estimation of antenatal women by heamoglobin colour scale n=200
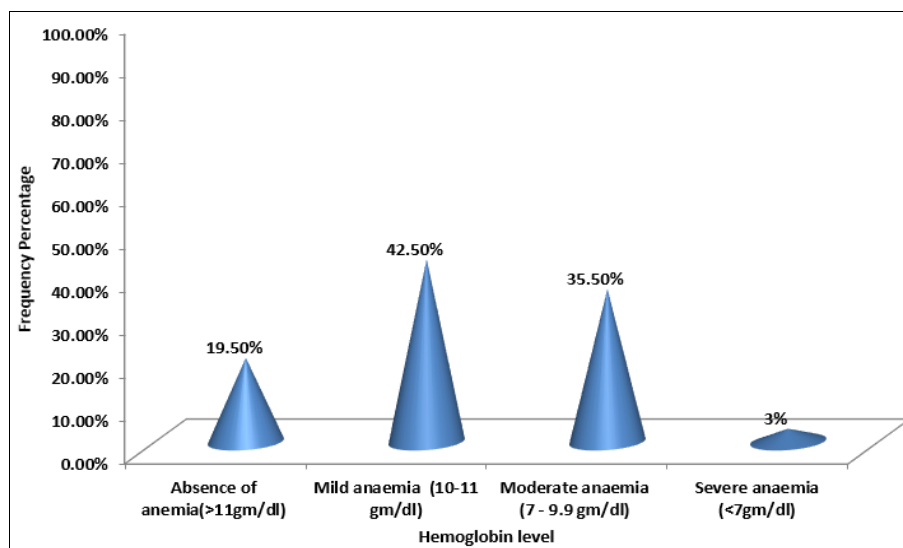

Fig 1: Bar diagram showing percentage distribution of tribal antenatal women according to haemoglobin level

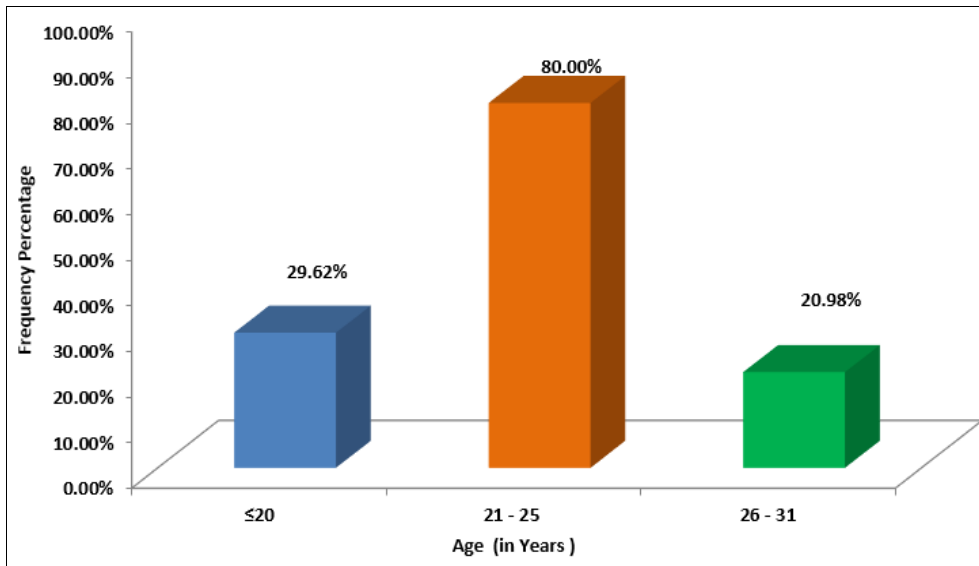**Section II** Distribution of sample by demographic characteristics. $n_1=162$

Fig 2: Bar diagram showing percentage distribution of sample according to age (in years)

Table 1: Frequency and percentage distribution of sample according to religion, no of family members and type of family. $n_1=162$

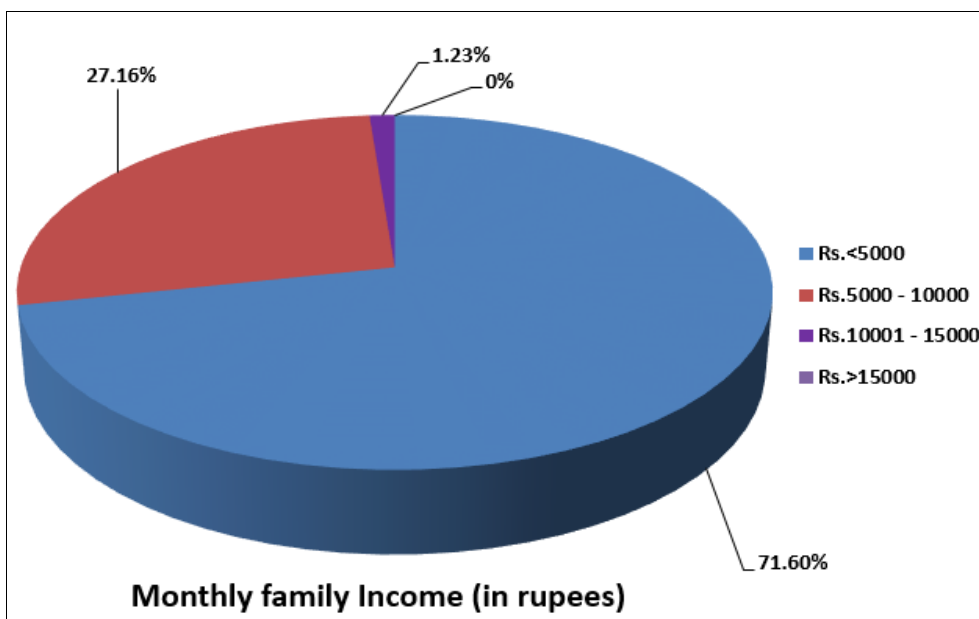| Demographic characteristics	Frequency	Percentage (%)
Religion		
Hinduism	162	100
Islam	Nil	--
Christianity	Nil	--
Others	Nil	--
No. of family members		
2	04	2.46
3	28	17.28
4	46	28.39
More than 4	84	51.85
Type of family		
Single	73	45.06
Joint	89	54.93

Fig 3: Pie diagram showing percentage distribution of sample according to monthly family income

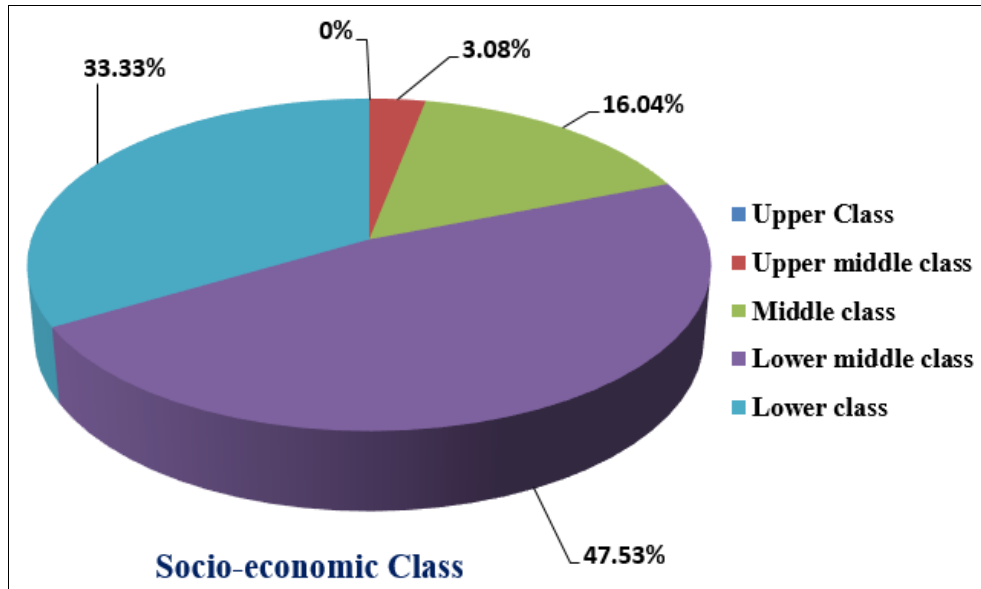**Section III** Findings related to associated factors of anemia. n_1=162

Fig 4: Pie diagram showing percentage distribution of sample according to their socio economic class n_1=162
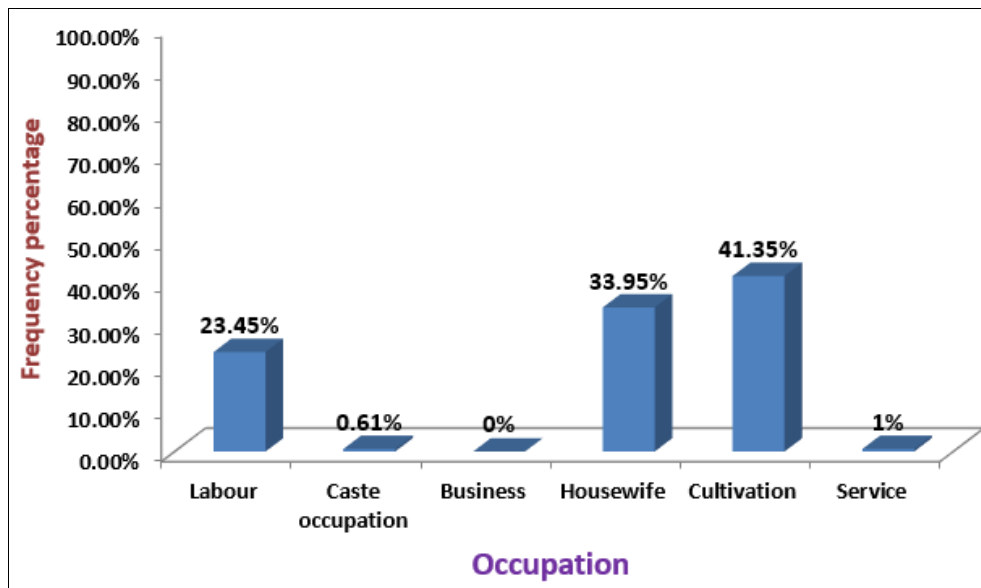

Fig 5: Bar diagram showing percentage distribution of sample according to their occupation n_1=162
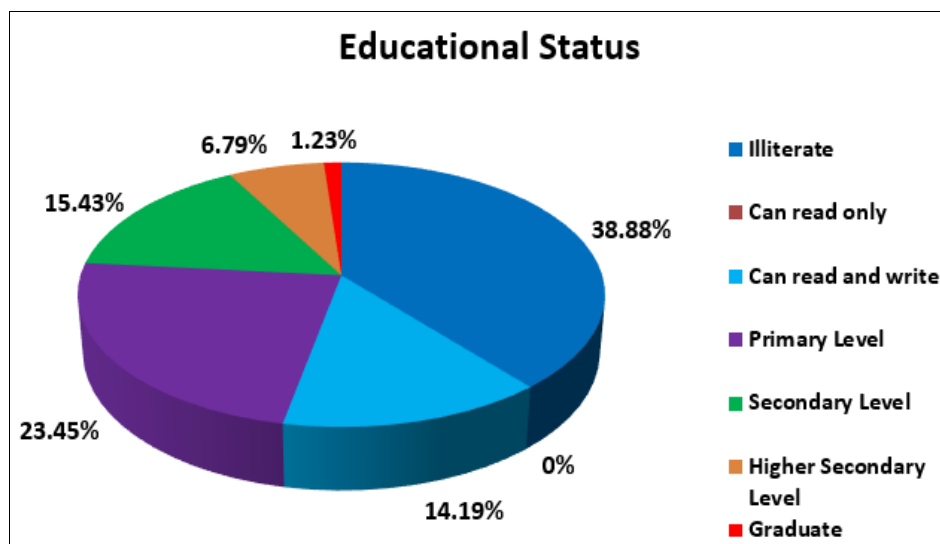

Fig 6: Pie diagram showing percentage distribution of sample according to education

Table 2: Frequency and percentage distribution of sample according to obstetrical and gynecological factors n_1=162

Criteria	Frequency	Percentage (%)
Duration of menstrual cycle		
3 days	75	46.29
4 days	50	30.86
5 days	33	20.37
>5 days	04	2.46
Nature of flow during menstruation		
Scanty	10	6.17
Normal	142	87.65
Heavy	10	6.17
Passage of blood clots	Nil	--
Age at marriage (in years)		
<20	124	76.54
20- 25	38	23.45
>25	Nil	--
Age at the time of first pregnancy (in years)		
<20	91	56.17
20 - 25	68	41.97
>25	03	1.85

Table 3: Frequency and percentage distribution of sample according to obstetric and gynecological factors n_1=162

Criteria	Frequency	Percentage (%)
Gravida		
1	77	47.53
2	43	26.54
3	23	14.19
4 and more	19	11.72
Gestational age (in weeks)		
0 - 12 weeks	39	24.07
13 - 28 weeks	91	56.17
29 - 40 weeks	32	19.75
History of abortion		
Yes	19	11.72
No	143	88.27
Age of last child (n_2=68)		
1 - 3 years	50	73.52
3 - 6 years	16	23.52
>6 years	2	2.94

Table 4: Frequency and percentage distribution of sample according to medical and surgical history. n_1=162

Medical and surgical history	Frequency	Percentage (%)
Any past medical illness		
Yes	32	19.75
No	130	80.24
Type of past medical illness (n_3 =32)		
Malaria	29	90.62
Tuberculosis	01	3.12
Typhoid	01	3.12
Piles/Hemorrhoids	01	3.12
Any present medical illness		
Yes	16	9.87
No	146	90.12
Type of present medical illness (n_4=16)		
Worm infestation	13	81.25
Angular stomatitis	03	23.07
Any history of surgery occur in past		
Yes	04	2.469
No	158	97.53

Table 5: Frequency and percentage distribution of tribal antenatal women according to dietary habit $n_1=162$

Dietary habit	Frequency	Percentage (%)
Meal frequency /day		
3 times	146	90.1
>3times	16	9.87
Frequency of taking fruit		
Everyday	05	3.08
Once a week	50	30.86
Twice a week	15	9.25
More than twice a week	06	3.70
Not taking any fruit	86	53.08
Frequency of taking meat		
Everyday	Nil	--
Once a week	60	37.03
Twice a week	50	30.86
More than twice a week	12	7.40
Once per month	28	17.28
Less than one time per month	02	1.23
Not taking any meat	10	6.17
Frequency of taking egg		
Everyday	29	17.90
Once a week	35	21.60
More than twice per week	39	23.45
Less than once per week	26	16.04
Not taking egg	34	20.98

Table 6: Frequency and percentage distribution of sample according to consumption of iron containing food $n_1=162$

Iron containing food	Responses	
	Frequency	Percentage (%)
Green leafy vegetables	162	33.96
Meat/Pork/Chicken	152	31.86
Dried fruits/Nuts	43	9.01
Fish	120	25.15
Total	477	100

*Multiple responses included

Table 7: Frequency and percentage distribution of sample according to consumption vitamin C containing food $n_1=162$

Consumption of vitamin C containing food	Frequency	Percentage (%)
Yes	68	41.97
No	94	58.02

Table 8: Frequency and percentage distribution of sample according to type of vitamin C containing food consumption $n_5=68$

Type of vitamin C containing food	Responses	
	Frequency	Percentage (%)
Lemon	60	65.21
Amla	01	1.08
Orange	31	33.69
Total	92	100

*Multiple responses included

Table 9: Frequency and percentage distribution of sample according to habit of drinking tea or coffee and intake of IFA tablets. $n_1=162$

Variables	Frequency	Percentage (%)
Habit of drinking tea or coffee		
Yes	78	48.14
No	84	51.85
If yes		
Before meal	Nil	
Within ½ an hour after meal	Nil	
Intake of IFA tablets		
Yes	121	74.69
No	41	25.30
If yes Any history of discontinuation ($n_{6=121}$) during IFA tablets intake		
Yes	33	27.27
No	88	72.72

Table 10: Frequency and percentage distribution of sample according to misconception regarding foods n_1=162

Variables	Frequency	Percentage (%)
Misconception regarding foods		
Yes	41	25.30
No	121	74.69
Type of food ($n_{7=}$ 41)		
Iron containing food (Fish, egg)	26	63.41
Vitamin C containing food (Tomato)	15	36.58

Section IV Findings related to association between selected demographic characteristics and anaemia.

Table 11: Chi square showing association between level of anemia and age (in years), no. of family members and monthly family income. n=162

Age (in years)	Mild anemia	Moderate anemia	Severe anemia	Chi-square
Age (in years)				
≤20	26	21	1	8.126*
>20	59	50	5	
Total	85	71	6	
No. of family members				
<4	42	15	1	14.46**
≥4	43	56	5	
Total	85	71	6	
Monthly family income				
<5000	61	51	5	0.40
≥5000	24	20	1	
Total	85	71	6	

df(2) =5.99, *p*<0.05 df(2) =9.21, *p*<0.01

Table 12: Chi square showing association between level of anemia and type of family n_1=162

Type of family	Mild anemia	Moderate anemia	Severe anemia	Chi-square
Nuclear	40	29	4	1.577
Joint	45	42	2	
Total	85	71	6	

df(2) =5.99, p>0.05

Table 13: Chi square showing association between level of anemia and occupation of the tribal antenatal women. n_1=162

Occupation	Mild anemia	Moderate anemia	Severe anemia	Chi-square
Labour, caste occupation	26	11	2	
Business, house wife	26	28	1	0.6415
Cultivation, service	33	32	3	
Total	85	71	6	

df (4) =9.49, p>0.05

Conclusion

Most of the tribal antenatal women were suffering from mild to moderate anemia. Most of them belonged to the lower middle class, they did cultivation, also maximum were illiterate. Early marriage was very high among them and they were unable to consume meat, fish, eggs, fruits adequately due to their low socio economic condition. The present study has shown a statistically significant association between anemia and age (in years) of tribal antenatal women and also shown association between anemia and number of family member of them.

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