International Journal of Biology, Pharmacy and Allied Sciences (IJBPAS)

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www.ijbpas.com

A STUDY TO ASSESS THE PREVALENCE OF ANEMIA AMONG TRIBAL WOMEN IN SELECTED TRIBAL AREAS OF GUJARAT

JOMIN JOSE[1*], ANJALI BHIMSEN[2], PREETI GANVIT[2], ANISHA DIWAN[2], YAGNESH RATHVA[2]

1: Associated Professor, Department of Medical Surgical Nursing, Sumandeep Nursing College, Sumandeep Vidyapeeth an institution Deemed to be University, Piparia,Vadodara, Gujarat, India

2: P.B.Bsc. Nursing, Sumandeep Nursing College, Sumandeep Vidyapeeth an Institution Deemed to be university, Piparia, Vadodara, Gujarat, India

*Corresponding Author: Jomin Jose; E Mali: jominjomon@gmail.com

ABSTRACT

Introduction: The concept of Anemia result from a lack of red blood cells or dysfunctional red blood cells in the body. This leads to reduced oxygen flow to the body's organs. Tribal women's are one of the risk group of anemia. Anemia is said to be present when the hemoglobin level in the blood is below the lower extreme of the normal range in the tribal women. **Aims:** To assess the prevalence of anemia among tribal women in selected areas of Gujarat. To find the association between prevalence of anemia and selected demographic variables of tribal women in selected areas of Gujarat. **Material and method:** In an non-Experimental study, the descriptive design was adapted. 284 subjects were recruited by non-probability convenient sampling technique among tribal women. The data gathering was carried out with a socio-demographic profile, observation check list on signs and symptoms of anemia and clinical assessment of hemoglobin level. **Results:** The result was that the 44% of tribal women are suffering from any forms of anemia in that 30% is suffering from moderate to severe anemia. the tribal women were has the socio-demographic factors of History of menstrual bleeding, Duration of menstruation, menstrual flow and duration of menstrual cycle are significantly associated with the Anemia. **Conclusion**: Carried out an

non- experimental study. The researchers believes and found that health education given on anemia while have significant improvement on knowledge of the tribal women regarding anemia. The observation check list on signs and symptoms of anemia score was 44% of tribal women are suffering from any forms of anemia in that 30% is suffering from moderate to severe anemia. The tallquist paper method of haemoglobin result was 40% of women have moderate to severe anemia.

Keyword: Prevalence, Tribal women, Anemia, Tribal area

INTRODUCTION

Anemia remains a major public Health problem, affecting one third of all adults and almost two billion people. Defined broadly as a condition associated with lower than normal Haemoglobin concentration Anemia impairs the circulation of oxygen in the blood, which in turn has detrimental effects on maternal and birth outcomes, suboptimal child growth, impaired learning and reduce work productivity and income earning during adulthood. Such effects compounded across the entire populations lead to significant economic losses, through foregone domestic product (GDP) and treatment costs.[1]

A healthy citizen contributes to the development of a country. Tribes are considered as the primitive groups who are backward and have a shyness to contact with community for their rights and services. Hence health care system should take efforts to reduce health problems among tribes and reduce their vulnerability to anemia. The statistics shows that tribal population contributes to an important portion of the whole population.[2]

India is the home to almost half of the tribal population of the world. Tribals are characterized by a distinctive culture, primitive traits, and socio-economic backwardness. Around 75 of these groups are called primitive tribal groups due to pre-agriculture level of knowledge, extreme backwardness, and dwindling population. One fourth of India's poorest people are Schedule Tribes (ST), even though they are only 8% percent of India's population.[1]

In terms of the tribal population Gujarat is in fifth number of having more number of tribal populations after Madhya Pradesh, Maharashtra, Odisha and Rajasthan respectively. 14.75% of total Gujarat's population belongs to tribal population it is nearly about 8,917,174 persons, as per the census of 2011.[3]

REVIEW OF LITERATURE

A descriptive survey study was conducted on prevalence of anemia among

tribal women Kasaragod Distric, Kerala. They were taken 445 tribal women as a sample, who met the inclusive criteria. Haemoglobin was assessed using haemoglobin strip apparatus and classified as nonanemia, mild, moderate and severe anemia based on world Health organization classification. The result was showed that the majority (89%) of the tribal women had anemia in which 62% and 11% of tribal woman had moderate and severe anemia. To provide them with good health status, government and health professionals have to identify the causes and interfere in that through various promotive and therapeutic activities.

Across-sectional study was conducted on Status of anaemia among tribal women in Manipur. They were taken 282 women as a sample in aged between 15-49 years, who met the inclusive criteria. The result were showed that the Anaemia prevalence of 38.95% (vaiphei) 32.29% (kom) and 17.58% (chothe) in the mild and moderate grades were observed among the women. Intervention and prevention needed for the women.

A cross-sectional study was conducted on Prevalence of anemia among reproductive age group tribal women in Uttarakhand, India. They were taken 72 women as a sample in aged between 15-45 years. The result were showed that the prevalence rate of anaemia was 64.28%. The majority of anaemic women were in the category of moderate (58.33%) to mild (37.5%) and severe (4.16%). This study validates the existence of moderate to mild anaemia among reproductive age tribal women and underlines the need for iron supplementation to all reproductive women. Awareness and education about anemia can be provided in these types of affected areas.

A cross-sectional study was conducted on prevalence of anemia and nutritional knowledge among tribal women of reproductive age group of Meghalaya, India. They were taken 150 tribal women as a sample in aged between 15 to 49 years, who met the inclusive criteria. Haemoglobin concentration was checked by portable digital haemometer. The result were showed that the overall Mean SD and prevalence of anemia was 9.40 ± 1.86 g/dl and 92 percent. The study revealed that dietary pattern and nutritional knowledge and practices of the selected tribal women were not satisfactory up to the standard of living.

STATEMENT OF THE PROBLEM

"A study to assess the prevalence of anemia among tribal women in selected tribal areas of Gujarat".

Objectives of the study

1. To assess prevalence of anemia among tribal women in selected areas of Gujarat State.
2. To give health education to tribal women in selected areas of Gujarat State.
3. To find the association between prevalence of anaemia and selected Socio-Demographic variables among tribal women in selected areas of Gujarat.

Hypothesis

H_1:- There will be significant association between prevalence of anaemia and selected socio-demographic variables among tribal women in selected tribal areas of Gujarat.

METHODOLOGY

The non-experimental research design was adopted. The study was carried out in the selected tribal areas of Gujarat. 284 subjects were selected by using non-probability convenient sampling technique. Formal written permissions was obtained from the Sarpanch of Chhotaudaipur, Dhandhoda, and Gujarat. The study was carried out during 8-2-2021 to 13-2-2021. 284 tribal women's who are selected based on the inclusion and exclusion criteria using non-probability convenient sampling technique. The investigator explained the purpose of study and written consent was obtained from the participants. Investigator collected data using Observational check list and Clinical assessment of haemoglobin level among tribal women using tallquist paper method. The researcher spent 15-30 min to collect data fro, each participant. Approximately 20 to 30 subjects were assessed per day. At the end of each data collection date the participants were called to a place nearby and provided health education related to anemia and its prevention.

RESULTS

The data collected were analyzed according to the plan for data analysis, which includes both descriptive and inferential statistics. The findings have been organized and presented under following sections:

Section A: - Frequency and percentage distribution of socio demographic variables.

Section B: - Frequency and percentage distribution of Observation check list on Signs and Symptoms of Anemia.

Section C: - Frequency and percentage distribution of Tallquist Paper method of haemoglobin.

Section D: - Association between Demographic variables and Observation check list on signs and symptoms of anemia.

Section E: - Association between Demographic variables and Tallquist paper method of haemoglobin.

SECTION A: - FREQUENCY AND PERCENTAGE DISTRIBUTION OF SOCIO DEMOGRAPHIC VARIABLES

Table 1 indicates that the tribal women are almost equally distributed in each age group. The majority of tribal women 84.9% (241) were married. The tribal women belongs only to Hindu and Muslim religion. Only 9.9% (28) have Degree and above Education qualification. Majority of women were daily wages (26.8%) and private employee (26.8%). The majority of tribal women had their monthly family income in between the 5000 to 10,000 35.4% (102). Only 6.3% (18) belongs to Extended family which is very less compared to previous studies. Only 11 tribal women has 2 family members in their home. The majority of tribal women 43.0% (122) are attained menarche at the age of 14. Most of tribal women 60.9 (173) are having normal menstrual bleeding Menorrhagia, polymenorrhea and irregular menstrual cycle are also present among tribal women. More than 3/4 of women, ie, 77.1% are having 4-5 days menstruation. The majority of tribal women 72.5% (206) have moderate menstrual flow. Only 4.6% (13) are having >than 30 days menstrual cycle. None of the tribal women 100% (284) are taking treatment for anaemia.

Table 1: Indicates that the tribal women are almost equally distributed in each age group (N= 284)

Sr. No.	Demographic variables	Frequency	Percentage (%)
1	Age (Years)		
	a. 18-25	58	20.4
	b. 26-30	44	15.5
	c. 31-35	62	21.8
	d. 36-40	65	22.9
	e. 41-45	55	19.4
2	Marital status		
	a. Married	241	84.9
	b. Divorced	6	2.1
	c. Single	37	13.0
3	Religion		
	a. Hindu	246	86.6
	b. Jain	-	-
	c. Muslim	38	13.4
	d. Christian	-	-
4	Educational Level		
	a. No formal education	78	27.5
	b. Primary education	46	16.2
	c. Secondary education	61	21.5
	d. Higher secondary education	71	25.0
	e. Degree and above	28	9.9
5	Occupation		

		a. Government employee	13	4.6
		b. Private employee	76	26.8
		c. Self employee	49	17.3
		d. Daily wages	82	28.9
		e. Unemployed	64	22.5
6		**Monthly Family income**		
		a. Less than 2000 rupees	57	20.1
		b. 2001 to 5000 rupees	55	19.4
		c. 5000 to 10,000 rupees	102	35.4
		d. More than 10,000 rupees	70	24.6
7		**Type of family**		
		a. Nuclear	93	32.7
		b. Joint	173	60.9
		c. Extended	18	6.3
8		**Number of family member**		
		a. 2	11	3.9
		b. 3	29	10.2
		c. 4	107	37.7
		d. 5	89	31.3
		e. >5	48	16.9
9		**Age at menarche attained**		
		a. 12	16	5.6
		b. 13	54	19.0
		c. 14	122	43.0
		d. 15	63	22.2
		e. 16	29	10.2
10		**History of menstrual bleeding**		
		a. Normal and regular	173	60.9
		b. Menorrhagia	80	28.2
		c. Ploymenorhea	11	3.9
		d. Irregular menstrual cycle	20	7.0
11		**Duration of menstruation**		
		a. 2-3 days	41	14.4
		b. 4-5 days	219	77.1
		c. >5 days	24	8.5
12		**Menstrual flow**		
		a. Heavy	56	19.7
		b. Moderate	206	72.5
		c. Scanty	22	7.7
13		**Duration of menstrual cycle**		
		a. <than 28 days	111	39.1
		b. 28 days	115	40.5
		c. 30 days	45	15.8
		d. >than 30 days	13	4.6
14		**Treatment for anemia**		
		a. Yes	-	-
		b. No	284	100

SECTION B: - FREQUIENCY AND PERCENTAGE DISTRIBUTION OF OBSERVATION CHECK LIST ON SIGNS AND SYMPTOMS OF ANEMIA

Table 2: Indicates that 44% of tribal women are suffering from any forms of anemia in that 30% is suffering from moderate to severe anemia (N= 284)

Sr. No	Observation check list on signs and symptoms of anemia	Frequency	Percentage %
1	0-5 No anemia	159	56.0
2	6-12 Mild anemia status	42	14.8
3	13-19 Moderate anemic status	62	21.8
4	20-26 Severe anemic status	21	7.4

SECTION C: - FREQUENCY AND PERCENTAGE DISTRIBUTION OF TALLQIST PAPER METHOD OF HEMOGLOBIN

Table 3: Indicates that 40% of women have moderate to severe anemia (N=284)

Sr. No	Tallquist paper method of hemoglobin	Frequency	Percentage %
1	No anemia	172	60.6
2	Mild anemia	-	-
3	Moderate anemia	89	31.3
4	Severe anemia	23	8.1

SECTION D: - ASSOCIATION BETWEEN DEMOGRAPHIC VARIABLES AND OBSERVATION CHECK LIST ON SIGNS AND SYMPTOMS OF ANEMIA

Table 4 shows that the calculated chi-square value is less than the table value for the demographic variables age, marital status, religion, educational level, occupation, monthly family income, type of family, number of family members, age at menarche attained and treatment for anemia. There is significant association between history of menstrual bleeding, duration of menstruation, menstrual flow, duration of menstrual cycle and socio-demographic variables.

Table 4   N= 284

Sr. No	Demographic variables	No anaemia	Mild anaemic status	Moderate anaemic status	Sever anaemic status	Chi-square	df	Level of significant
1.	Age (Years)							
	a. 18-25	37	8	9	4			
	b. 26-30	27	8	6	3			
	c. 31-35	35	8	17	2	19.614	12	N/S
	d. 36-40	28	11	15	11			
	e. 41-45	32	7	15	1			
2.	Marital status							
	a. Married	133	35	56	17			
	b. Divorced	3	1	1	1	2.620	6	N/S
	c. Single	23	6	5	3			
3.	Religion							
	a. Hindu	134	35	57	20			
	b. Jain	0	0	0	0	4.002	3	N/S

	c. Muslim	25	7	5	1			
	d. Christian	0	0	0	0			
4.	**Educational Level**							
	a. No formal education	38	8	24	8	17.620	12	N/S
	b. Primary education	26	7	11	2			
	c. Secondary education	38	11	11	1			
	d. Higher secondary education	40	12	14	5			
	e. Degree and above	17	4	2	5			
5.	**Occupation**							
	a. Government employee	11	0	0	2	19.613	12	N/S
	b. Private employee	42	12	16	6			
	c. Self employed	26	13	7	3			
	d. Daily wages	49	7	22	4			
	e. Unemployed	31	10	17	6			
6.	**Monthly family income**							
	a. Less than 2000 rupees	30	4	20	3	13.328	9	N/S
	b. 2001 to 5000 rupees	30	9	13	3			
	c. 5000 to 10,000 rupees	61	15	19	7			
	d. Morethan 10,000 rupees	38	14	10	8			
7.	**Type of family**							
	a. Nuclear	58	13	18	4	8.956	6	N/S
	b. Joint	91	29	37	16			
	c. Extended	10	0	7	1			
8.	**Number of family members**							
	a. 2	7	1	2	1	14.083	12	N/S
	b. 3	17	7	5	0			
	c. 4	69	12	19	7			
	d. 5	44	16	20	9			
	e. >5	22	6	16	4			
9.	**Age at menarche attained**							
	a. 12	8	1	3	4	18.235	12	N/S
	b. 13	26	11	14	3			
	c. 14	73	19	23	7			
	d. 15	31	9	16	7			
	e. 16	21	2	6	0			

10.	History of menstrual bleeding							
	a. Normal and regular	122	27	16	8	18.141	9	S
	b. Menorrhagia	33	8	34	5			
	c. Ploymenorhea	0	0	6	5			
	d. Irregular menstrual cycle	4	7	6	3			
11.	Duration of menstruation							
	a. 2-3 days	25	5	9	2	18.227	6	S
	b. 4-5 days	130	29	45	15			
	c. >5 days	4	8	8	4			
12.	Menstrual flow							
	a. Heavy	7	9	24	16	18.292	6	S
	b. Moderate	141	28	33	4			
	c. Scanty	11	5	5	1			
13.	Duration of menstrual cycle							
	a. <than 28 days	55	20	30	6	20.486	9	S
	b. 28 days	77	16	14	8			
	c. 30 days	23	4	14	4			
	d. >than 30 days	4	2	4	3			
14.	Treatment for anemia					-	-	N/S
	a. Yes	0	0	0	0			
	b. No	159	42	62	21			

P<0.05   S= significant, NS = Not significant

SECTION E: - ASSOCIATION BETWEEN DEMOGRAPHIC VARIABLES AND TALLQUIST PAPER METHOD RESULT

Table 5 shows that the calculated chi-square value is less than the table value for the demographic variables age, marital status, religion, occupation monthly family income, type of family, number of family members, age at menarche attained, treatment for anemia. There is significant association between educational level, history of menstrual bleeding, duration of menstruation, menstrual flow, duration of menstrual cycle and demographic variables.

Table 5 (N =284)

Sr. No	Demographic variables	No anaemia	Mild anaemic status	Moderate anaemic status	Sever anaemic status	Chi-square (χ^2)	df	Level of significant
1.	Age(Years)							
	a. 18-25	36	0	17	5	13.37	8	N/S
	b. 26-30	31	0	10	3			
	c. 31-35	36	0	24	2			
	d. 36-40	34	0	20	11			
	e. 41-45	35	0	18	2			

2.	**Marital status**							
	a. **Married**	**144**	**0**	**78**	**19**	**1.446**	**4**	**N/S**
	b. **Divorced**	**4**	**0**	**1**	**1**			
	c. **Single**	**24**	**0**	**10**	**3**			
3.	**Religion**							
	a. **Hindu**	**174**	**0**	**77**	**22**	**1.818**	**2**	**N/S**
	b. **Jain**	**0**	**0**	**0**	**0**			
	c. **Muslim**	**25**	**0**	**12**	**1**			
	d. **Christian**	**0**	**0**	**0**	**0**			
4.	**Educational Level**							
	a. **No formal education**	**40**	**0**	**29**	**9**	**17.07**	**8**	**S**
	b. **Primary education**	**29**	**0**	**15**	**2**			
	c. **Secondary education**	**42**	**0**	**17**	**2**			
	d. **Higher secondary education**	**40**	**0**	**20**	**5**			
	e. **Degree and above**	**21**	**0**	**2**	**5**			
5.	**Occupation**							
	a. **Government employee**	**11**	**0**	**0**	**2**	**7.669**	**8**	**N/S**
	b. **Private employee**	**47**	**0**	**22**	**7**			
	c. **Self employed**	**30**	**0**	**16**	**3**			
	d. **Daily wages**	**48**	**0**	**28**	**6**			
	e. **Unemployed**	**36**	**0**	**23**	**5**			
6.	**Monthly family income**							
	a. **Less than 2000 rupees**	**32**	**0**	**22**	**3**	**4.030**	**6**	**N/S**
	b. **2001 to 5000 rupees**	**33**	**0**	**18**	**4**			
	c. **5000 to 10,000 rupees**	**62**	**0**	**32**	**8**			
	d. **More than 10,000 rupees**	**45**	**0**	**17**	**8**			
7.	**Type of family**							
	a. **Nuclear**	**64**	**0**	**24**	**5**	**4.247**	**4**	**N/S**
	b. **Joint**	**98**	**0**	**59**	**16**			
	c. **Extended**	**10**	**0**	**6**	**2**			
8.	**Number of family members**							
	a. **2**	**7**	**0**	**3**	**1**	**12.96**	**8**	**N/S**
	b. **3**	**21**	**0**	**8**	**0**			
	c. **4**	**74**	**0**	**25**	**8**			
	d. **5**	**47**	**0**	**32**	**10**			
	e. **>5**	**23**	**0**	**21**	**4**			
9.	**Age at menarche attained**							
	a. **12**	**8**	**0**	**4**	**4**	**14.17**	**8**	**N/S**
	b. **13**	**30**	**0**	**21**	**3**			
	c. **14**	**80**	**0**	**33**	**9**			
	d. **15**	**33**	**0**	**23**	**7**			
	e. **16**	**21**	**0**	**8**	**0**			
10.	**History of menstrual bleeding**							
	a. **Normal and**	**133**	**0**	**33**	**7**			

	regular							
	b. Menorrhagia	33	0	41	6	17.99	6	S
	c. Ploymenorhea	0	0	5	6			
	d. Irregular menstrual cycle	6	0	10	4			
11.	**Duration of menstruation**							
	a. 2-3 days	26	0	12	3	18.19	4	S
	b. 4-5 days	141	0	63	15			
	c. >5 days	5	0	14	5			
12.	**Menstrual flow**							
	a. Heavy	8	0	30	18			
	b. Moderate	150	0	52	4	18.61	4	S
	c. Scanty	14	0	7	1			
13.	**Duration of menstrual cycle**							
	a. <than 28 days	58	0	46	7			
	b. 28 days	84	0	23	8	18.790	6	S
	c. 30 days	25	0	15	5			
	d. >than 30 days	5	0	5	3			
14.	**Treatment for anemia**							
	a. Yes	0	0	0	0	-	-	N/S
	b. No	172	0	89	23			

P<0.05   **S= Significant, NS = Not significant**

DISCUSSION

In our present study socio demographic factors of History of menstrual bleeding (18.141), Duration of menstruation (18.227), menstrual flow (18.292) and duration of menstrual cycle (20.486) showed a significant association with the Observation checklist on signs and symptoms of anemia (p<0.005).

Similarly socio demographic factors of Educational level (17.070), History of menstrual bleeding (17.996), Duration of menstruation (18.196), menstrual flow (18.6181) and duration of menstrual cycle (18.790) Showed a significant association

with the Tallquist paper method result(p<0.005).

We refer the study of prevalence of anemia and its socio demographic co-relates among adolescent girls of Bhopal city. The study was conducted by Shweta shrivastava *et al*. In that study it was found that statistically significant association of anemia with lower age, lower education status of mother and father, father or mother engaged in unskilled work and upper lower socioeconomic class was observed (p<0.05). Similarly, anemia was significantly associated with low BMI, heavy menstrual blood flow (p=0.004) and higher number of days of blood flow

(p=0.027). This study result is similar to our study.

CONCLUSION

The present study assessed the hemoglobin level of tribal women. The researchers believes and found that health education given on anemia while have significant improvement on knowledge of the tribal women regarding anemia.

The observation check list on signs and symptoms of anemia score was 44% of tribal women are suffering from any forms of anemia in that 30% is suffering from moderate to severe anemia.

The tallquist paper method of haemoglobin result was 40% of women have moderate to severe anemia.

AUTHORS CONTRIBUTION

Connceptualization & Supervision: Mr. Jomin Jose. Methodology, Formal analysis and investigation: Mr. Jomin Jose, Ms. Anjali Bhimsen, Ms. Preeti Ganvit, Anisha Diwan, Mr.Yagnesh Rathva. Writing- original draft preparation: Mr. Jomin Jose.; writing – review and editing: Mr. Jomin Jose, Ms. Anjali Bhimsen. Ms. Preeti Ganvit, Ms. Anisha Diwan. Mr. Yagnesh Rathva.

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