



Status of Anaemia in Tribal Women of Banswara District, Rajasthan

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ABSTRACT Anaemia is a basic health problem of tribal women in developing and developed countries with major consequence for women health which is characterized by low level of haemoglobin in blood. The main objective of this study was to find out the haemoglobin status of tribal women in 18-25 years of age. For this survey was done from 4 November to 22 November, 2013 in Janameri, Tejpur and Kher Dabra villages of Banswara district of southern Rajasthan. Haemoglobin percentage of women was calculated according to Sahali's method. In this study the overall prevalence of anaemia was found to be 90 percent out of which 3.33 percent, 53.33 percent and 33.33 percent women have severe, moderate and mild anaemic status respectively. Only 10 percent women are non-anaemic. The main diet of non-anaemic women are green leafy vegetables (spinach, fenugreek leaves, *Bathua* leaves, radish leaves, mustard leaves, mint, etc.), and whole pulses which are rich in iron and guava and amla are rich in ascorbic acid.

INTRODUCTION

A tribe is a social group speaking a distinctive language or dialect and possessing a distinctive culture, mainly live in hills and forest. Tribes are spread all over Rajasthan but are mainly concentrated in Udaipur, Banswara and Dungarpur districts. The Bhils who have been declared schedule tribes are also considered as *Adivasi* or original settlers by the local caste groups. Bhils constitute the third largest tribal group of India, next to Gonds and Santhals. They are also one of the largest schedule tribes of Rajasthan and constitute 44.50 percent of the total tribal population of Rajasthan (Bhasin and Jain 2007). Anaemia is a global public health problem affecting both developing and developed countries with major consequence for women health. Anaemia is characterised by low level of haemoglobin in the blood. Haemoglobin is necessary for transportation of oxygen from the lungs to the body tissues.

The World Health Organization's definition of anaemia (haemoglobin concentration < 12 g/dl in women and < 13 g/dl in men) is most often used in epidemiologic studies of adults (WHO 2001).

Anaemia is said to be present when haemoglobin level in blood is below to the lower extreme of the normal range for the age and sex of the individual (Firkin et al. 1989).

Anaemic status occurs at all developmental stages of the life cycle, but is more prevalent in adolescent girls and pregnant and lactating women. In India, anaemia affects an estimated 50 percent of population (Seshadri 1998). Anaemia usually results from a nutritional deficiency of iron, poor absorption of iron from diet, high phytate or tannin or phenolic compounds, and period of life when iron requirement is especially high in pregnancy, lactation and adolescent period. The presence of important micronutrient deficiencies including vitamin C and B12, folic acid, riboflavin and copper can increase the risk of anaemia. Iron deficiency is most widespread form of malnutrition in the world, affecting more than two billion people (Stolz and Dreyfuss 1998). Anaemia is an indicator of both poor nutrition and poor health. The most dramatic health effects of anaemia, that is, increased risk of maternal and child mortality due to severe anaemia, have been well documented (Gregor 2002; Scholl and Hediger 1994; Bothwell and Charlton 1981). Most of the existing studies point out that anaemia among women causes increased risk of low birth weight, inadequate iron stores for the new born, higher risk of maternal morbidity and mortality as well as a decline in mental concentration and physical activity (Gillespie and Johnston 1998; Toteja et al. 2006). With limited resources and the complex, often multifactorial nature of anaemia in the developing world, combating this problem is a global public health challenge (Yip and Ramakrishnan

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2002). According to National Family Health Survey 2008, anaemia is a serious health problem in India which may have detrimental effect on the health of women. Upadhyay et al. (2011) observed that the high prevalence of anaemia among women in India is a serious health hazards for their families and for the economic development and productivity of the country. Maiti et al. (2013) observed that the overall prevalence among women was 70.1 percent. The majority demonstrated moderate anaemia (55.7%) while mild anaemia was recorded in 14.4 percent and none of the subject had severe anaemia. Biswas and Baruah (2014) observed the prevalence of anaemia was to be 86.88 percent in pregnant women of Assam. So the present study was conducted to find out status of anaemia in tribal women of Banswara district, Rajasthan.

MATERIAL AND METHODS

Surveys are done from 4 November to 22 November, 2013 and data was collected. The researchers have considered the category of anaemia according to WHO (2001) guidelines, that is,

Non- anaemic: > 12.0gm/dl

Mild anaemic: 10.0 -11.9 gm/dl

Moderate anaemic: 7.0 – 9.9 gm/dl

Severe anaemic: < 7.0 gm/dl

Haemoglobin percentage is calculated according to Sahali's Method (1996), with help of medical technician. In this method a mixture of 20 ml blood sample and 1 ml of N/10 HCl was diluted with 1 to 5 drops of distilled water. Haemoglobin was haemolysed by N/10 HCl. In this reaction haemoglobin converted into mith haemoglobin which shows brown colour and this brown colour was matched with standard brown colour of instrument and note this reading.

RESULTS AND DISCUSSION

The prevalence of anaemia in tribal women in the age group of 18-25 years with respect to

their activity profile, age, dietary intake, socio-economic status and demographic conditions in their habitats of southern Rajasthan (India) has been studied (Table 1). The present study is carried out on 60 tribal women. In this study the overall prevalence of anaemia was found to be 90 percent, out of which 3.33 percent are severe anaemic, 53.33 percent moderately anaemic and 33.33 percent are mild anaemic and only 10 percent women are non anaemic. The main diet of non-anaemic women are green leafy vegetables (spinach, fenugreek leaves, *Bathua* leaves, radish leaves, mustard leaves, mint, etc.), and whole pulses which are rich in iron and guava and amla are rich in ascorbic acid. Similar prevalence is reported by Toteja et al. (2006) who found 90 percent prevalence of anaemia among adolescent girls from 16 districts of India. Bulliyy et al. (2007) found that 96.5 percent prevalence of anaemia among non-school going adolescent girls in 3 districts of Orissa, out of which 45.2 percent, 46.9 percent and 4.4 percent had mild, moderate and severe anaemia. Salivkar (2012) observed that 88.85 percent of tribal women affected from anaemia in Melghat. Similarly, Agarwal (2013) observed higher percentage (74%) of anaemia in tribal women of Orrisa. Srinivasa et al. (2014) also reported the prevalence of anaemia among tribal women in Wayanad district of Kerala was found to be 96.5 percent. Mild anaemia was found to be 30.5 percent. About (55.9%) had moderate degree anaemia. Prevalence of severe anaemia was found to be 10.1 percent. Verma et al. (2012) found that the prevalence of anaemia in females (20-50 years) was 70.1 percent, which included 48.7 percent of mild, 19.9 percent of moderate and 1.5 percent of severe anaemia cases. Anaemia may have detrimental effects on the health of women and children and may become an underline cause of maternal mortality and prenatal mortality. Anaemia results in an increased risk of premature delivery and low birth weight (WHO 2001). Early detection of anaemia can help to prevent complications related to pregnancy and delivery as well as child development problems. Information on the prevalence of anaemia can be useful for the develop-

Table 1: Status of anaemia in tribal women of Banswara district, Southern Rajasthan

Non- anaemic (>12.0 gm/dl)		Mild Anaemic (10.0 to 11.9 gm/dl)		Moderate Anaemic (7.0 to 9.9 gm/dl)		Severe Anaemic (<7.0 gm/dl)	
No.	%	No.	%	No.	%	No.	%
06	10	20	33.33	32	53.33	02	3.33

ment of health intervention programmes designed to prevent anaemia, such as iron fortification programmes. In India, under the governments reproductive and child health programmes, iron and folic acid tablets are provided to pregnant women in order to prevent anaemia during pregnancy because anaemia is such a serious health problem in India (NFHS-2 1998; WHO 2002). Findings of this study also corroborate with findings of Unisa et al. (2010) observed that higher proportion of working women was found to be severely and moderately anaemic. Those women who consumed foods such as fruits, vitamin C, pulses were quite low, which can be one of the predicted cause of anaemia among women.

CONCLUSION

The general observation is that very less women are suffering from severe type of anaemia that is 3.33 percent, most of the women are under the category of moderate anaemia that is 53.33 percent and 33.33 percent women are suffering from mild type of anaemia and 10 percent women are non- anaemic.

RECOMMENDATIONS

To improve nutritional status of tribal women health education awareness and nutritional counseling are necessary. For that we have to improve existing dietary supplementation providing services in tribal areas. This tribal area based bodies can encourage tribal women for the consumption of iron and folic acid tablets as an efficient measure to prevent and cure of anaemia.

REFERENCES

- Agrawal S 2013. Disadvantageous situation of tribal women and children of Orissa, India. A special reference to their health and nutritional status. *J Commun Nutr Health*, 2(1): 3-14.
- Biswas M, Baruah R 2014. Maternal anaemia associated with socio-demographic factors among pregnant women of Boko- Bongaon block Kamrup, Assam. *Ind J Basic Appl Med Resear*, 3(2): 712-721.
- Bhasin MK, Jain S 2007. Biology of the tribal groups of Rajasthan, India: Body mass index as an indicator of nutritional status. *Anthropologist*, 9(3): 165-175.
- Bothwell T, Charlton R (Eds.) 1981. *Iron Deficiency in Women*. Washington DC: Nutrition Foundation.
- Bulliy G, Mallick G, Seth GS, Kar SK 2007. Haemoglobin status of non-school going girls in 3 districts of Orissa, India. *Int J Adolescent Med Health*, 19: 395-406.
- Firkin F, Chesterman C, Penington D, Rush B 1989. *de Gruchy's Clinical Haematology in Medical Practice*. 5th Edition. Oxford: Wiley-Blackwell.
- Gillespie S, Johnston J 1998. The micronutrient initiative. *Lancet*, 351: 1268-1269.
- Mac Gregor M 2002. *Maternal Anaemia as a Factor in Pre Maturity and Prenatal Mortality*. World Health Organization, Geneva.
- Maiti S, Ali KM, Ghosh A, Ghosh D, Paul S 2013. Prevalence of anaemia among rural women population of Paschim Medinipur, West Bengal, India. *Nepal J Med Sci*, 02(1): 9-12.
- National Family Health Survey 2 1998-99. Mumbai: International Institute for Population Sciences.
- National Family Health Survey India 2008. Mumbai: International Institute for Population Sciences.
- Salivkar SS 2012. A study of schedule tribe pregnant women's having anaemia disease with reference to Melghat. *Int Index Ref Resear J*, 4(41): 25-26.
- Scholl TO, Hediger ML 1994. Anaemia in iron deficiency anaemia: Complication of data on pregnancy outcome. *American J Clin Nutr*, 59: 492S-500S.
- Seshadri 1998. *Data Base Iron Deficiency Anaemia in India. Prevalence, Etiology, Consequences and Strategies for Control*, Task Force for Micronutrients Malnutrition Control. Department of Women and Child Development, Ministry of Human Resource, Development, New Delhi.
- Shrinivasa BM, Philip RR, Krishnapali VK, Suraj A, Sreelakshmi PR 2014. Prevalence of anaemia among tribal women of reproductive age-group in Wayanad district of Kerala. *Int J Health and Appl Sci*, 3(2): 120-124.
- Stolzfus RJ, Dreyfuss ML 1998. *Guidelines for the Use of Iron Supplements to Prevent and Treat Iron Deficiency Anaemia*. Washington: International Nutritional Anaemia Consultive Group.
- Toteja GS, Singh P, Dhillon BS, Saxena BN, Ahmed FU, Singh RP 2006. Prevalence of anaemia among pregnant women and adolescent girls in 16 districts of India. *Food Nutr Bull*, 27: 311-315.
- Unisa S, Roy TK, Ganguly S, Anaemia Study Group 2010. A multi-method assessment of anaemia and response to iron supplementation among women in west Bengal, India. In: KS James, A Pandey, DW Bansode, L Subaiya (Eds.): *Population, Gender and Health in India: Methods, Processes and Policies*. New Delhi: Academic Foundation, pp. 1-16.
- Upadhyay S, Kumar AR, Singh R, Raghuvanshi, Singh BB 2011. Nutritional status and knowledge of hill women of anaemia: Effect of various socio-demographic factors. *J Hum Ecol*, 33(1): 29-34.
- Verma P, Singh S, Ghildiyal A, Kumar A, Krishna A, 2012. Prevalence of anaemia in adults with respect to socio-demographic status, blood groups and religion in North Indian population. *Int J Biol Med Res*, 3(4): 2422-2428.
- World Health Organization 2001. *Iron Deficiency Anaemia: Assessment, Prevention and Control*. Geneva.
- World Health Organization 2002. *Worldwide Prevalence of Anaemia 1993-2005- Global Database on Anaemia- Reducing Risks, Promoting Healthy Life*. Geneva.
- Yip R, Ramakrishnan U 2002. Experiences and challenges in developing countries. *J Nutr*, 132: 827S - 830S.