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Research Article

Prevalence of Anemia Among Schedule Caste Women in Rural Area of Eastern Nepal

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Abstract

Anemia of schedule caste women in Rural area of Eastern Nepal is a prominent problem in developing countries. On the present study is to determine the prevalence of anemia of schedule caste women of Baijnathpur, eastern Nepal.

A Cross sectional study was conducted to the schedule caste non -pregnant women of the age group 20 - >70 years during August - November 2015.A total 432 women were participant in the present study. Cyanmethamoglobin used for the determination of anaemia. The prevalence of anaemia was found to be 242(56%) out of N= 432 women. Anaemia was classified as per the world health organization (WHO), mild, moderate and severe. The highest prevalence of anaemia 66.7% was found at the age group of 50-59 years and second highest 59.3% was found at the age group of 20-29 years of the anaemic population. The mean and SD of haemoglobin were 11.49±2.05gm/dl and 10.14±1.57 gm/dl of total and anaemic population respectively

Keywords: Anaemia; Prevalence; Schedule caste

Introduction

Anemia is a very common problem in Nepal. It affects almost all ages and both sexes. It is especially common in females and lower socio-economic group. Nepal is a developing country and literacy rate is low in compared to many other developing countries, people are still ignoring about the specific dietary requirement.

It is reported that 2170 million people are affected worldwide by nutritional anemia. Out of these, 90% live in developing countries, among these developing countries; South East Asia has the highest prevalence of anemia (Seshadri, 1995). The prevalence of iron deficiency anemia (IDA) in developing countries. (Dubey, 1995)

This results inability of the erythropoitic tissue to maintain a normal Hb concentration on account of an in adequate supply of one or more nutrients. Multipurity poor socio-economical and educational statuses are the principal reason for high prevalence of anemia in our population (Abbasi *et al*., 2009). Women from poor households are usually found to have higher anemia prevalence. A poor socioeconomic situation is known to be associated with a number of factors such as high parity, short birth interval poor diet both in quality and quantity, lack of health and nutrition awareness and a high rate of infectious disease and parasitic infestations. Since the socioeconomic situation is an important determinant of access to health care, poor people have often limited asses to medical attention and preventive

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measures (Lovell and Abed, 1988) increasing their risk of becoming anemic.

In Nepal the prevalence of anemia in Morang district and south western region amongst reproductive age group women were 54.89% and 67.3% respectively (Sinha *et al*., 2013a, Sinha *et al*., 2013b).Other studies on anemia in pregnancy in Nepal the prevalence was 62.2%out of which 3.6% with severe anemia showed in a study done in Kathmandu (Bondevik *et al*., 2000) and 47.2% was in Biratnagar, Morang district of Nepal (Sinha *et al*., 2012).The WHO global database on anemia for 1993-2005 covering almost half the world population, estimated the prevalence of anemia worldwide at 25 percent (de Benoist *et al*., 2008).Although the prevalence of anemia is estimated at present in countries with high development with low development. The prevalence is 43 percent women are most at risk, with global anemia, prevalence estimates of 42% in pregnant women and 30% in non-pregnant women 15-45 years (Mc Kean *et al*., 1993-2005).

In view of this, our aim is to determine the prevalence of anemia among the schedule cast women of the Baijnathpur Village development committee (VDC) rural area of eastern Nepal and to explore some factors commonly associated with anemia. The National Family Health survey [NFHS-2] status that 52% of women in India are suffering from anemia, mainly nutritional. Incidence of anemia among women is as high as60%inAssam, Bihar, Orissa, West Bengal. Whereas, the prevalence of anemia is around 54%in Karnataka and only 23% in kerala (NFHS, 2002).

Methods

This community based cross sectional study conducted in rural area of Sub health post Baijnathpur (VDC), associated with District Public health office (DPHO) Morang district, rural area of eastern Nepal a field practice area, Department of Community Medicine, Birat medical college teaching hospital, during August - November 2015.

The data were assessed by the by the questionnaire with the help of Medical students of Birat medical college teaching hospital. Sample size 432 schedule caste women from Baijnathpur (VDC), Morang district, rural area of eastern Nepal selected for study. Present study was conducted to highlight these situation schedule caste women aged >20yrs of rural area of Baijnathpur.Women who were pregnant at the time of survey were not included in the study. The blood hemoglobin of the subjects' concentrations was carried out by Cyanmethamoglobin method (Drabkin and Austin, 1932) which was checked each day at Birat medical college teaching hospital Laboratory, Tankisinwari.

As anemia is classified in to three degree according to WHO: mild, moderate and severe. Hb cut-off values of anemia were 10.0-11.9 gm/dl (mild), 7.0-9.9 gm/dl (moderate) and <7.0 gm/dl (severe). WHO guideline was used for interpretation and classification of anemia (WHO, 1986). All the data were entered in SPSS and analyzed mean and standard deviation of total and anemic population were calculated. The subject protocol was approved by ethics community of BMCTH. The Study protocol was fully explained to the subjects and consent was obtained prior the commencement of the study.

Results

Total 432 schedule caste women age group 20->70 years were studied. Anaemia is a condition characterized by a decrease in the concentration of Hb in the blood. In our study the mean haemoglobin concentration of anaemic women of rural area of eastern region of Nepal is found to 10.14±1.57gm/dl. The cumulative distribution of haemoglobin is shown in Table 1. In this study, we found that women of the age group 50-59 and 20-29 years were at high risk of anaemia.The prevalence of anaemia among schedule caste women is higher in rural area of Baijnathpur ,eastern Nepal.

Table 1: Characteristics of study population (N=432*)*

Age (Yrs)	Anemic	Normal	Total
20-29	108	74	182
	59.3%	40.7%	100.0%
30-39	53	49	102
	52.0%	48.0%	100.0%
40-49	38	33	71
	53.5%	46.5%	100.0%
50-59	20	10	30
	66.7%	33.3%	100.0%
60-69	14	15	29
	48.3%	51.7%	100.0%
70+	09	09	18
	50.0%	50.0%	100.0%
Total	242	190	432
	56.0%	44.0%	100.0%

Table 2: Severity of anemia at different age groups

Age(Yrs)	Severe	Moderate	Mild	Normal	Total
20-29	09	31	68	74	182
	4.9%	17.0%	37.4%	40.7%	100.0%
30-39	02	12	39	49	102
	2.0%	11.8%	38.2%	48.0%	100.0%
40-49	02	11	25	33	71
	2.8%	15.5%	35.2%	46.5%	100.0%
50-59	01	06	13	10	30
	3.3%	20.0%	43.3%	33.3%	100.0%
60-69	01	03	10	15	29
	3.4%	10.3%	34.5%	51.7%	100.0%
70+	0	02	07	9	18
	0%	11.1%	38.9%	50.0%	100.0%
Total	15	65	162	190	432
	3.5%	15.0%	37.5%	44.0%	100.0%

Table 3: Number of patients and Hb level in different category of anemia

Anemia Category	Total No. of Patient (N= 242)	Hb (gm/dl)
Mild	162 (37.5%)	11.08±0.55
Moderate	65 (15.0%)	8.62±0.87
Severe	15 (3.5%)	6.52±0.81

Table 4: Comparison of Mean and SD of age and Hb concentration

Subject		Mean	SD
Anemic (N= 242)	Age	35.43	14.30
Non Anemic (N=190)	Age	38.50	15.12
Anemic	Hb	10.14	1.57
Non Anemic	Hb	13.22	1.04
Total Population (N=432)			2.05
Age		35.9	14.661
Hb		11.497	2.05

Based on the concentration of haemoglobin in the blood, anemia is classified in three groups mild, moderate and severe The mean and SD of age and haemoglobin were 35.9±14.66 years and 11.49±2.05 gm/dl among total population (Table 2**)**.

Table 3 shows that among the anemic population 242 (56%), when the level of anemia is disaggregated by severity mild, 37.5% (11.08±0.55gm/dl) moderate 15.0, (8.62±0.87gm/dl) and 3.5% (6.52±0.81gm/dl).

Discussion

The prevalence of anemia in a population is best determined by using are liable method of measuring haemoglobin concentration. (WHO, to be published). The present study was not designed specifically to study all the risk factors for anemia in this population. We stipulate that the higher prevalence could be due to the poor diets with low bio-available iron with worm infestation. The WHO has proposed that if the prevalence of anemia is in a region between 5% and 20% appropriate interventions based on food diversification food fortification, iron supplementation

and controlling infections growth and residence to infections and is also associated with mortality among children >2yrs old.

The importance as anemia as a major public health problem throughout the world is widely recognized. The present study was under taken in order to gauge the prevalence of anemia in the Schedule cast women in rural area of Baijnathpur (VDC), eastern region of Nepal. Nutritional anemia should ideally be address through dietary diversification and improved access to foods that have high iron bioavailability, including animal products. Other food based approaches such as fortification of staple foods and condiments can also be used.

The present study by and large has revealed that the problem of anemia is still among the schedule caste women of Baijnathpur (VDC) due to two main reasons that is socioeconomic status and lack of awareness about nutrition, such as green leafy vegetables which contain rich amount of iron are not consumed by the peoples due to lack of awareness about food values.

In the present study we found a significant association between various socio demographic factors and the prevalence of anemia. A study by Kaur K has also found that sociocultural factors play an important role in determining prevalence of anemia (Kaur, 2014). The impact of literacy status on anemia was also studies by Dutta et.al. and was found to be significant (Datta *et al*., 1992).

Several studies have also found a negative association between the socioeconomic situation (SES) and anemia prevalence (Carlo and Sosa, 1991; Isah *et al*., 1985; Johnson *et al*., 1982). A poor socioeconomic situation (SES) is known to be associated with a number of factors such as high parity, short birth interval, poor diet both in quantity and quality, lack of health and nutrition awareness and high rate of infectious diseases and parasitic infections. Since the socioeconomic situation (SES) is an important determinant of access to health care, poor people have often limited to medical attention and preventive measures (Lovell and Abed, 1988) increasing their risk of becoming anemic.

In India the prevalence of anemia among all ages remains very high. The prevalence rate among rural pregnant women is 84.9% with 9.9% having severe anemia (Teoteja and Singh, 2001). Another study among (Maiti *et al*., 2013) rural women population the prevalence is 70.1%. Study done in Morang district and southwester region of Nepal in reproductive age group the prevalence of anemia was 54.89% and 67.3% respectively.

Conclusion

Anemia of schedule caste women in rural area of eastern Nepal is a prominent problem in developing countries. On the present study is to determine the prevalence of anemia of schedule caste women of Baijnathpur, Eastern Nepal.

The highest prevalence of anaemia 66.7% was found at the age group of 50-59 years and second highest 59.3% was found at the age group of 20-29years of the anaemic population.

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