Journal of the Institute of Medicine 1999; **21**: 1 –235 Original Article

Prevalence of anaemia among females of the reproductive age group visiting Chisapani dispensary

V. Bhatia[1] **B. Mishra**[1]

N. Manandhar[2] **S. Bista**[4]

M. Shah[3]

ABSTRACT

Anaemia is one of the major health problems in Nepal. Nutritional anaemia is one of the commonest forms of anaemia and affects chiefly the females in the reproductive age group. The available data from the hospital records and small-scale studies put the estimate to more than 50%. There are other figures that project the range from 60-75% among this group. The present study was conducted on females of the reproductive age group visiting the dispensary attached to Nepalgunj Medical College, Chisapani. The total number of females included in the study was 71. Nearly 65% were less than 30 years of age. The literacy rate was around 39.4%. Among the 66 married females, the number of children ranged from 0-7. Among the subjects, 79% were found to be anaemic. The proportion of female with anaemia was not associated with increasing age or education of the subjects but some degree of association could be observed with increasing number of children. Usage of temporary contraceptive was also found to be associated with a larger proportion of females being anaemic. The degree of contribution made by hookworm infestation to the present figures of anaemia cannot be commented upon in numerical terms but could be high.

Keywords: Anaemia; Reproductive age-group; females.

1 MD, Lecturer, Department of Community Medicine, Nepalgunj Medical College, Chisapani, Banke.

2 MSc, Lecturer, Department of Community Medicine, Nepalgunj Medical College, Chisapani, Banke.

3 MSc, Laboratory Technician, Department of Community Medicine, Nepalgunj Medical College, Chisapani, Banke.

4 MA, Lecturer, Department of Community Medicine, Nepalgunj Medical College, Chisapani, Banke.

INTRODUCTION

A healthy child of today ensures a healthy nation of tomorrow. Having said that, let us not forget that health of the child is dependent largely on the health of the mother. The story begins right from the intra-uterine stage and goes on till the child is able to take care of himself and maybe even beyond. Let us add here another phrase – A healthy mother bears and rears a healthy nation.

Health of the mother is important from various aspects because not only does she provide direct nutrition to the child but also is the first teacher of the child. Health, as we know has a very broad spectrum and several factors influence it. Nutritional status is one of the indicators of health and is known that malnutrition has always been a cause of concern in the developing countries. In context of females of the reproductive age group, this is specifically important because of factors already mentioned. A glimpse of the sorry state of health of females in developing countries and specifically in Nepal can be had from the very high levels of Maternal Mortality rates. The figures quoted for Nepal range from 515/100,000 live-births to 850/100,000 live-births.[1] UNICEF estimates these figures to 1500/100,000 live-births according to the approach developed by John Hopkins University, WHO & UNICEF where under-reporting and miss-classification is taken into account.[2]

Nutritional anaemia is one of the entities lying in the spectrum of malnutrition. Anaemia as we know is said to exist in the condition where haemoglobin level is below the recommended cut off points. Iron deficiency anaemia is by far the most common variety of anaemia throughout the world, affecting mainly the women in their reproductive age, infants and children.[3,4]

The females of reproductive age group become specifically vulnerable to anaemia not only because of poor intake but also due to blood loss during the menstrual cycle and the burden of pregnancy and lactation. This is added on to by the Hookworm infestation. There is also a decrease in iron absorption during pregnancy due to decreased HCl secretion.[3]

Anaemia is a major nutritional problem in women and children in Nepal. Although no nationally representative data are available, hospital records and small-scale studies have noted that >50% of females of the child bearing age and 63% of pregnant and lactating mothers suffer from nutritional anaemia.[5] Certain studies quote these figures to more than 75% for pregnant females.[6]

Control of anaemia is one of the major thrust areas in nutrition programme of the Ministry of Health under His Majesty's Government. The target of National Health Programme is to reduce anaemia to less than 50% by the year 2001.[5]

Keeping all these factors in mind, a study was carried out at Nepalgunj Medical College dispensary, Chisapani, to find out the prevalence of anaemia in the females of the reproductive age group, visiting the dispensary.

MATERIAL AND METHODS

The study was carried out at the dispensary of Nepalgunj Medical College being run under the Community Medicine Department. The dispensary caters to the rural population. The people attending are from Chisapani and neighbouring villages. All the investigations and services (incl. medicines) are being provided at a nominal charge of Rs. 5/- (for OPD ticket).

For the purpose of study, all females of the reproductive age group (15-44 years of age) were selected. A pre-structured questionnaire was used for the purpose of interview and investigations for the level of Hb were carried out after informed consent. Those females not willing to participate were left out. The haemoglobin estimation was carried out by Sahli's method in the department of Pathology. For the diagnosis of anaemia, the cut-off limit of haemoglobin was taken as 11 g/dl for pregnant and lactating females. For the rest, the cut-off limit of 12 g/dl was used.[7] Those with Hb level of <10 g/dl were considered markedly anaemic.

RESULTS AND DISCUSSION

A total of 71 females were interviewed and investigated. The results so obtained are provided below.

Age structure:

As seen in table I, 46 females (64.8%) out of the total of 71 were less than 30 years of age. The pattern observed is chiefly related to the pattern of OPD attendance and also because females of higher age group were more apprehensive and hence less willing to be interviewed.

Table I: Age structure of subjects.

Age group	*Number*	*Percentage*
15-19	14	19.7
20-24	18	25.4
25-29	14	19.7
30-34	7	9.9
35-39	9	12.7
40-44	9	12.7
Total	71	100

Literacy rate:

In the present study, 28 females (39.4%) could be considered literate in the sense that they could at least read and write their name. It must also be mentioned here that within this group were 5 females (~7%) who have had education beyond the primary level. The figure appears much better than the available data for the Terai region, which puts it at 20-25%.[8]

Diet:

As we know diet has a major role to play in determining the nutritional status, it was observed that more than 97% of the females claimed to be non-vegetarian, but the frequency of such diet was difficult to establish. More than 94% of the subjects were taking dark greenleafy vegetables in diet but only 14% were consuming them regularly. With the erosion of traditional beliefs and customs, cooking habits have also changed and in the present study less than 10% of females were using iron utensils for cooking.

Pregnancy/Lactation & Number of children:

Out of the 71 females 66 were married. Among the married females, 9 (12.7%) were

pregnant while 23 (33.4%) were lactating. The number of children among the married females ranged from 0-7, with an average of 2.6 approx. There were 33 females (>50%) in the married group who had 3 or more children. The family size appears relatively small here because of the young population forming a large part of the study group. The total fertility rate for Nepal as we know is quoted to be 4.4.[8]

Contraceptive use:

In the present study, 8 (11.3%) subjects claimed to be using temporary contraceptive (including husbands using condoms), while 15 (21.1%) of them had adopted some or the other permanent method. This puts the total contraceptive prevalence rate to 32.4%, which is slightly higher than the national average of 28.5%.[7]

Anaemia**:**

Using the criteria as mentioned in the 'material and methods', it was observed that out of those pregnant/lactating, 24 were anaemic and out of the rest 32 were anaemic. This puts the total to 56 (79%). Out of these 30 (43%) had marked anaemia (table II & III). The actual figure in this category ranged from 6.0 g/dl to 9.8 g/dl.

It is seen that all the females with 5 or more children were anaemic to a certain degree or the other (Table IV). More than 90% of females with 4 children were also anaemic. As mentioned along with the tables that statistical analysis test was not useful. No specific trend was observed when increasing age was compared with the presence or absence of anaemia. Similarly, the level of education also had no specific relation with presence of anaemia.

Table II: Pattern of haemoglobin level found in pregnant and lactating subjects.

Hb level	*Number*	*Percentage*	
>11 g/dl	8	25	
10-11 g/dl	9	28.1	24 (Anaemic)
<10 g/dl	15	46.9	
Total	32	100	

Table III: Pattern of haemoglobin level found in other subjects.

Hb level	*Number*	*Percentage*	
>12 g/dl	7	17.9	
10-12 g/dl	17	43.6	32 (Anaemic)
<10 g/dl	15	38.5	
Total	39	100	

Table IV: Relationship of anaemia with the number of children.

Number of children	*Anaemic **	*Not anaemic*	*Total*
0	10	2	12
1	8	1	9
2	14	3	17
3	8	8	16
4	11	1	12
5	2	0	2

Chi square test not valid as an expected frequency

6	2	0	2	<5
7	1	0	1	
Total	56	15	71	

(*Pregnant/Lactating <11 g/dl, Others<12 g/dl)

Table V: Relationship of anaemia with age.

Age group	*Anaemic**	*Not anaemic*	*Total*
15-19	13	1	14
20-24	15	3	18
25-29	10	4	14
30-34	6	1	7
35-39	6	3	9
40-44	6	3	9
Total	56	15	71

Chi square test not valid as an expected frequency <5

(*Pregnant/Lactating <11 g/dl, Others<12 g/dl)

Table VI: Relationship of anaemia with level of education.

Level of education	*Anaemic**	*Not anaemic*	*Total*
None	34	9	43
Non-formal	5	2	7
Primary	14	2	16
Secondary	2	2	4
Higher secondary	1	0	1
Total	56	15	71

Chi square test not valid as an expected frequency <5

(*Pregnant/Lactating <11 g/dl, Others<12 g/dl)

Table VII: Relationship of anaemia with usage of contraception.

Use of contraception	*Anaemic**	*Not anaemic*	*Total*
None	37	11	48
Temporary	7	1	8
Permanent	12	3	15
Total	56	15	71

Chi square test not valid as an expected frequency <5

(*Pregnant/Lactating <11 g/dl, Others<12 g/dl)

Comparative table between usage of contraceptive and presence of anaemia showed that a greater proportion of anaemics were there among those using temporary method of contraception. This could possibly be explained by the fact that the most common method of contraception used was Depot. Provera, which occasionally causes irregular bleeding.

It can thus be concluded here that despite other parameters being relatively better than the national average, a high level of anaemia is observed in the present study. There are possibly multiple reasons for the present findings, like the social status of females, the workload, (which were difficult to estimate), etc. It is quite likely that one of the important reasons is hookworm infestation, (which was not investigated for). To explain the matters further, a flow chart has been drawn (Chart 1). The chart shows the various factors influencing health particularly the nutritional status of females and the vicious circle of malnourished child and mother hence being created.

Chart 1: Vicious circle of malnourished mother and child.

After taking into consideration the results of the study, and the other available data, the following measures are suggested:

1. Health education (including nutritional education) – Certain iron rich foods are relatively cheap and easily available. These include *sisno, karkalo, gundruk*, etc.
2. Free and easy availability of iron tablets – Iron tablets should be available in all remote areas and at places freely accessible to all. It must be also mentioned here that for the prophylaxis of iron deficiency anaemia, dietary factors play an important role. Once anaemia has developed, it is both unwise and uneconomical to try to correct it by dietary methods alone and iron tablets should be relied upon.[3]
3. Support of certain traditional practices like giving extra food to pregnant and lactating mothers.
4. Education and job opportunities for all females to eliminate any gender bias.
5. Community-based survey of anaemia and parasite load esp. hookworm infestation. Some studies have already pointed out towards a heavy parasitic load in the general community.[6]

ACKNOWLEDGEMENT

We thank Prof. SN Pandeya (Principal), Dr. SK Kanodia (MD), Prof. RS Khare (HoD, Community Medicine) for facilitating the project. The authors also convey thanks to Mr. K Sathyaprakash for the help with the computers.

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