

# Perception of Anaemia Among Women in a Tea Estate of Bangladesh

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## Abstract

The study was conducted to find out the knowledge of anaemia among the women of reproductive age between 15 to 49 years at Datmara tea state of Fatikchari sub district of Chittagong district in Bangladesh. Total 158 respondents were selected for investigation. Selection of the study sites and number of respondents were done purposively. Respondents were interviewed with the help of prestructured questionnaires. Among the respondents most of them are 18-27 years age group. Most of them are illiterate (83.54%). Among the respondents most of them belonged to lower class (85.44%) while 14.56% belonged to lower middle class. Maximum (72.79%) respondents reported that they had no idea about anemia. Most of the respondents (91.14%) had no idea about iron containing food. It was found that 3.80% respondents used to take iron tablet and 5.70% took anti helminthicon a regular basis. About 12.66% respondents suffered from helminthiasis and 9.49% suffered from skin diseases. It was found that most of the respondents were moderately anemic. This study on anaemia, the tea garden dwellers will able to get idea about the women of our country regarding the situation.

## Keywords

Anaemia Teagarden, Women, Reproductive Age, Bangladesh

## 1. Introduction

Anemia is a common health problem, especially in the female population of reproductive age, not only in developing country like Bangladesh but also all over the world.

According to [1], worldwide prevalence of anemia (1993-2005), the Hb threshold among non pregnant women (>15 years) is 12.0 gm/dl and pregnant women 11.0 gm/dl.

It [2] analyzed the risk factors of anemia among the people of USA, iron deficiency was the most prevalent nutritional deficiency associated with poverty. Young children (9-18

months) have the highest risk followed by premenopausal women, adolescent men and adult, post menopausal women had the lowest risk. The aim of the study [3] was to determine the prevalence of anemia and associated factors among pregnant women. It revealed that anemia is found to be moderate public health problem in the study region.

It was conducted by [7] to evaluate the differentials in the prevalence of anemia among non pregnant and ever married women of reproductive age in Bangladesh and to examine the associations with demographic, socioeconomic and nutritional factors. The sources of anaemia were due to the high illiteracy, poverty and under nutrition according to the study [7]. Study of [16] was conducted to identify the factors

associated with anemia and mentioned that anemia in children and women is a severe public health problem in Sierra Leone. It is observed in [8] that anaemia is a silent killer among women in India. It is explored [4, 14] the association between anemia status and selected demographic, socioeconomic and household characteristics among rural women in Bangladesh. It is seen [5, 11-15] that young age, educational status and socioeconomic status, poor birth spacing and risk of compliance to iron and folic acid supplementation are risk factors which are involved in anaemia.

This study [10] showed moderate prevalence of anaemia among the pregnant women, with a sizable proportion having severe anemia. It was suggested [12] that women should be educated on the importance of taking iron and folic acid during pregnancy. In their study [6] they wanted to investigate for any association exists between HFI and anaemia among women of reproductive age in Bangladesh. It is found that HFI is a significant predictor of anaemia among women of reproductive age in Bangladesh.

A cross sectional study [9] was conducted to estimate the prevalence of iron deficiency anaemia among the university students of a district in Bangladesh. The study revealed that majority of female students was anaemic due to food habit and lack of awareness. It was suggested that students should be provided proper knowledge on the healthful diet, improved lifestyle and harmful effect of anaemia to the students.

There are only few studies that had been done in Bangladesh on anaemia which is not enough to reflect current situation of diseases especially in the tea garden workers. So, to assess the current perceptions of anaemia among the female reproductive age, a survey has been carried out at Datmara Tea State, Bhujpur, Chittagong with a view to conduct the present study.

This study is not enough to assess the current situation of the disease because it was carried out in a small area on small population, which does not reflect the actual scenario. Despite, this study may give some information and assist to conduct further study regarding health problem like anaemia.

## 2. Methodology

The study venue was Datmara tea state of Bhujpur village under Fatikchari sub district of the Chittagong district of Bangladesh. The village is approximately 55 km from the Chittagong city center. Numbers of respondents were 158 and they were women of reproductive ages between 15-49 years. They were interviewed with the help of prestructured questionnaires through face to face interview. Selection of study venues and respondents were done purposively. The study is a descriptive type. Data was collected during the month of December, 2013. Data of this study came from Residential Field Site Training (RFST) program of Group F of students of MBBS, batch 53<sup>rd</sup> of the Department of Community Medicine, Chittagong Medical College, Chittagong and was supervised by the first author and

approved of the same department. Respondents were assured that data should be used for research purpose and their privacy should be maintained confidentially.

In order to collect data, students were divided into 8 teams comprising 3-4 students. Supporting research materials were haemoglobinometer, sphygmomanometer, stethoscope, wristwatch, clipboard, pen and pencil etc. Two laboratory technicians went with the investigators for assisting them in Hb% determination. It took 75 test tubes, 10 haemoglobinometer, adequate amount of reagents and lancets. After taking consent from the respondents, it was collected capillary blood by finger pricking under proper sterilization by the help of technicians. Then it was estimated Hb% by haemoglobinometer on spot. Data were analyzed through frequency and percentage.

## 3. Discussion

To estimate the prevalence and burden of anemia a survey was conducted 158 females on the basis of different selected variables. Regarding educational status, it was found that most of the respondents (83.54%) were illiterate, 12.03% had entry of primary level education while only 0.63% had studied S.S.C level. It is found in [10] that 61.2% were illiterate while 38.8% were literate among the selected respondents. The deprivation of knowledge is one of the major determinants for high prevalence of anemia in Bangladesh. Among the respondents, the 82.28% worked in the tea garden and 17.72% were housewife.

During the survey, it was found that 91.40% respondents were married while 8.86% respondents were unmarried which is similar to [10]. Among the husbands of married respondents, 90.97% were tea garden worker, 1.39% were technicians and 7.64% were involved in other occupations. Regarding educational status of husbands of respondents, 76.39% were illiterate, 15.28% had primary education, 6.25% had secondary education, 1.39% passed the S.S.C while 0.69% studied up to the level of H.S.C.

In relation to the number of family members, 63.29% respondents' had family members between 4 to 6, 28.48% respondents' had 1 to 3 members, 7.60% respondents' had 7 to 9 members and 0.63% respondents' family comprised of 10 family members. In their study [4] it is found that number of household members >5 is 59.7% while  $\geq 5$  is 40.3% which assumes closes to the present study.

About the number of children, 37.68% respondents' had one child, 31.88% respondents' had two children, 18.12% respondents' had three children while four or more children was belonged to 12.39% respondents.

In case of socioeconomic status of the respondents, 85.44% respondents belonged to lower class and the lower middle class was belonged to 14.56% respondents. This result indicates the low standard of living which can be attributed to the risk of anemia. The study of [4] indicates that 33.5% is the lowest while 41.1% is the middle class family.

Among the respondents, 72.79% had no idea about anemia but 27.21% of them heard about anemia. They had learned it

from different sources such as 30.23% from neighbors, 25.58% from mass media, 20.93% from relatives, and 11.63% from health personnel while rest of them from other sources. Among the respondents who had idea about anemia, of them, 30.23% knew about the pallor as symptoms, 18.61% realized about weakness and a great portion (27.91%) knew about multiple symptoms. It is found that 46.15% respondents took food supplement, iron tablet preferred 23.08% respondents and multiple way as treatment was adopted in 26.92% respondents.

All respondents took carbohydrate, followed by green vegetables 93.04%, protein 27.21%, fresh fruit 6.96% and sea foods 5.06% respondents as their daily diet. In [10] it is observed that fruit, vegetables were consumed by 32.6% and red meat, poultry and fish were consumed by 27.1% respondents. The present study results somehow agrees with [10].

Most of the respondents (91.14%) had no idea about iron containing food. Among them, 10.13% respondents used to consume iron containing food like red meat, egg yolk, dark green vegetables and beans whereas others did not. Only 3.80% respondents used to take iron tablet and 5.70% of them took antihelminthic on a regular basis but the rest of them did not. Only 4.43% of the respondents were conscious about iron deficiency as a cause of anemia, 95.57% respondents were ignorant about it. This indifference to their diet habit along with other factors leads to the high prevalence of anemia.

The study revealed that 91.77% of respondents had average menstrual flow while other 8.23% claimed to have excessive menstrual flow. In relation to menstrual duration, 62.60% respondents had menstruation for 4-6 days, 22.79% respondents had less than 3 days, 1.92% respondents had 7-10 days and rest of them had more than 10 days. It was told that 72.48% had no menorrhagia sufferings and the remaining 21.52% had experience of menorrhagia.

About 63.77% respondents used contraceptive method. They also preferred to depot preparation, implanon, IUCD and barrier method. Among the respondents who preferred OCP, of them 65.79% used to take regularly whereas 34.21% respondents were irregular. None of them had any complaint about side effects from OCP intake or using IUCD.

Regarding pregnancy profile, 67.39% of them conceived their first child between the ages of 15-20 years, 21.01% of them had their child at the age of 21-25 years, 7.97% had before the age of 15 years, 2.90% had 25-30 years and 0.67% had after the age of 30 year. This result clearly indicates the frequency of early pregnancy among them. During this period, the body is not prepared for conception. Moreover, there is extra need of nutrients for physical growth during this adolescent period. Their apathy to this fact and ignorance make them more prone to develop anemia.

Most of the respondents had multiple pregnancies as it is found from the study. It is found that 38.05% respondents had one child, 30.60% had two children and the rest 31.35% had either three or more than three children.

About 98.53% of the respondents had home delivery and

1.47% had institutional delivery. Out of 273 cases of delivery, 98.90% were normal and the rest 1.10% were lower segment caesarian section. 56.41% of the deliveries were attended by relatives or local traditional nurse, 41.76% deliveries were done by trained birth attendant while only 1.83% deliveries were done by doctor. In maximum cases of delivery, there was no excessive case of bleeding, whereas in 8.42% told that they had excessive cases of bleeding during child birth. In 99.27% of cases, no blood transfusion was needed. Regarding the interval between pregnancies, 50% of the cases, there was interval more than 2 years, followed by 37.5% for two years and 12.5% for 1 year. From this result, most remarkable fact can be said, though there is a medium rate adoption of contraceptive method among the respondents, they actually used the method after having more than 2 or 3 children. This tendency of having multiple pregnancies leads them to face more blood loss and other physical stress. They were also callous to proper birth spacing. Moreover, most of the delivery was held in home by inexperienced nurse or relatives. The cumulative effect of all these factors has a negative effect on their health which as a result increase the burden of anemia.

In relation to the personal hygiene habit of the respondents, 92.41% took regular bath, 72.79% washed their hands before eating and after using toilet, 91.14% used to drink purified water, 74.68% covered up their food to protect from flying insects and dust, 68.99% cleaned their clothes regularly, 52.49% cut nails regularly and 29.11% used sandal regularly. In the case of purified water, the present study agrees with others [3].

According to the study, 91.77% of the respondents had diastolic pressure between the range 60-90 mmHg, 5.06% had below 60 mmHg and only 3.17% had above 90mmHg. Most of the respondents had pulse rate between 60-100/min while only 6.97% had below 60/min. The study also revealed that 16.46% of them had PUD, 8.86% had helminthiasis, 9.49% had skin disease, 8.86% had common cold and 10.13% had multiple diseases like diabetes, hypertension and back pain etc.

It was revealed, 33.85% of 65 respondents had Hb level between the range of 10.00-10.90(gm/dl), followed by 24.62% had in the range of 9.00-9.90(gm/dl), 20% in the range of 11.00-11.90(gm/dl), 12.31% had more than 12.9gm/dl and only 9.22% had the Hb concentration between 8.00-8.90(gm/dl). According to WHO, pregnant women with a Hb level less than 11gm/dl and non pregnant women with a level less than 12gm/dl are considered anemic. On the basis of WHO definition of mild (11.00-11.9gm/dl), moderate (8.00-10.9gm/dl) and severe (<8.0gm/dl) anemia, for non pregnant women, it was revealed that 67.70% of the respondents were moderately anemic, 20% were mildly anemic and 12.3% were non anemic. In this study, moderate anaemia is common followed by mild anaemia. Findings of [3, 10&13] observed mild anaemia is common followed by moderate anaemia. So the present study disagrees with them [3, 10&13]. The prevalence of moderate anaemia might be due to difference in the socioeconomic factors and lack of

awareness about the consequences of anaemia in the study participants.

## 4. Recommendations

- Education level should be improved.
- Increasing awareness among the people about nutritional food intake such as iron containing food through health education program.
- Awareness about anaemia should be established through mass media.
- People should be given health education about personal hygiene, environmental sanitation and improve living condition.
- There should be local health center for regular and periodic health examinations of tea estate workers.

## 5. Conclusion

Anaemia, the subject of the study is one of the considerable public health nutrition problems among the reproduction age between 15-49 years women in Bangladesh. Many studies have emphasized on prevalence of anaemia in last decade. The survey of this study focused to address the prevalence of anaemia. This subject was selected as it is one of the alarming causes for maternal mortality and morbidity in Bangladesh.

Revealed from the study that 20% respondents were mildly anaemic, 67.70% respondents were moderately anemic and 12.3% respondents were free from anaemia. It was found in [3] that 58.5% respondents were mildly, 35.7% moderately and 5.8% severely anemic. Though it was not possible to check Hb of all respondents but it is assumed that the anemic situation of the respondents of present study is comparatively better since the present study respondents' had no severe anaemia.

The data from this survey provide baseline information about the perception of anaemia that can be used by policy makers and health administration in implementing new strategies as well as strengthening services to counteract the anaemia problem in Bangladesh.

## Appendix

**Table 1.** Educational status of the respondents.

Educational level	Number
Illiterate	132(83.54%)
Primary	19(12.03%)
Secondary	6(3.80%)
S.S.C	1(0.63%)
H.S.C	Nil
Graduate	Nil
Total	158(100%)

Field survey: 2013

**Table 2.** Level of education of the husbands of respondents.

Level of education	Number
Illiterate	110(76.39%)
Primary	22(15.28%)
Secondary	9(6.25%)
S.S.C	2(1.39%)
H.S.C	1(0.69%)
Graduate	Nil
Total	145(100%)

Source: Field survey: 2013

**Table 3.** Number of members of the family of respondents.

Family member	Number
1-3	45(28.48%)
4-6	100(63.29%)
7-9	12(7.6%)
10 and above	1(0.63%)
Total	158(100%)

Source: Field survey 2013

**Table 4.** Number of children of the respondents.

Children	Number
1	52(37.68%)
2	44(31.88%)
3	25(18.12%)
4	17(12.32%)
Total	138(100%)

Source: Field survey 2013

**Table 5.** Idea on anaemia of the respondents.

Anaemia	Number
Yes	43(27.21%)
No	115(72.79%)
Total	158(100%)

Source: Field survey 2013

**Table 6.** Idea on symptoms of anaemia.

Idea on anaemia symptom	Number
Pallor	13(30.23%)
Weakness	8(18.61%)
Dizziness	6(13.95%)
Palpitation	4(9.30%)
Stomatitis	Nil
E. Dyspnoea	Nil
Multiple	12(27.91%)
Total	43(100%)

Source: Field survey: 2013

**Table 7.** Idea of the respondents about iron containing food.

Idea	Number
Yes	14(8.86%)
No	144(91.14%)
Total	158(100%)

Source: Field survey 2013

**Table 8.** Menorrhagia of the respondents.

Menorrhagia sufferings	Number
Yes	34(21.52%)
No	124(78.48%)
Total	158(100%)

Source: Field survey 2013

**Table 9.** Consumption of iron containing food.

Food consumption	Number
Yes	16(10.13%)
No	142(89.87%)
Total	158(100%)

Source: Field survey 2013

**Table 10.** Requirement of blood transfusion during delivery.

Blood transfusion	Number
Yes	2(0.73%)
NO	271(99.27%)
Total	273(100%)

Source: Field survey 2013

**Table 11.** Mode of delivery of respondents.

Mode of delivery	Number
Normal	270(98.90%)
LSCS	3(1.10%)
Assisted Village doctor	Nil
Total	273(100%)

Source: Field survey 2013

**Table 12.** Place of delivery of the respondents.

Place of delivery	Number
Home	269(98.53%)
Institution	4(1.47%)
Other	Nil
Total	273(100%)

Source: Field Survey 2013

**Table 13.** Age of the pregnancy of the respondents.

Age of the respondents	Number
<15 years	17(7.97%)
15-20 yers	93(67.39%)
21-25 years	29(21.01%)
25-30	4(2.90%)
>30 years	1(0.67%)
Total	138(100%)

Source: Field survey 2013

**Table 14.** Anti helminthic drug intake of the respondents.

Anti helminthic drug intake	Number
Yes	9(5.70%)
No	149(94.30%)
Total	158(100%)

Source: Field survey, 2013

**Table 15.** Iron tablet intake of the respondents.

Iron tablet intake	Number
Yes	6(3.80%)
No	152(96.20%)
Total	158(100%)

Source: Field Survey 2013

**Table 16.** Adaptation of contraceptive methods.

Adaptations	Number
Yes	88(63.77%)
No	70(36.23%)
Total	158(100%)

Source: Field survey, 2013

**Table 17.** OCP intake habit.

OCP intake habit	Number
Regular	25(65.79%)
Irregular	13(34.21%)
Total	38(100%)

Source: Field survey, 2013

**Table 18.** Types of health problem among the respondents.

Helth problem	Number
PUD	26(26.46%)
Helminthiasis	20(12.66%)
Bronchial asthma	6(3.80%)
Diabetes	12(7.60%)
Hypertension	12(7.60%)
Leucorrhoea	6(3.80%)
Skin disease	15(9.49%)
Common cold	14(8.86%)
Back pain	10(6.33%)
Headache	11(6.96%)
Food allergy	2(1.27%)
Multiple disease	16(10.13%)
Others	8(5.04%)
Total	158(100%)

Source: Field survey 2013

**Table 19.** Regular bath habit.

Regular bath habit	Number
Yes	146(92.41)
No	12(7.59%)
Total	158(100%)

Source: Field survey, 2013

**Table 20.** Habit of hand washing before meal and after using toilet.

Hand washing habit	Number
Yes	115(72.79%)
No	43(27.21%)
Total	158(100%)

Source: Field survey, 2013

**Table 21.** Drinking of purified water by the respondents.

Drinking purified water	Number
Yes	144(91.14%)
No	14(8.86%)
Total	158(100%)

Source: Field survey, 2013

**Table 22.** Pulse rate of the respondents.

Pulse range	Number
<60	8(6.96%)
60-100	150(93.04%)
>100	nil
Total	158(100%)

Source: Field survey, 2013

**Table 23.** Relationship between Hb% of the respondents and sufferings of menorrhagia by them.

Hb% of the respondents (gm/dl)	Menorrhagia suffering	Menorrhagia suffering	Total Number
	Yes	No	
7-7.9	-	-	-
8-8.9	5(83.33%)	1(16.67%)	6(100%)
9-9.9	7(43.75%)	9(56.25%)	16(100%)
10-10.9	4(18.18%)	18(81.82%)	22(100%)
11-11.9	3(23.08%)	10(76.92%)	13(100%)
>12	-	8(100%)	8(100%)
Total	19(29.23%)	46(76.77%)	65(100%)

Field survey, 2013

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