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# Level of Haemoglobin of Unhealthy Adolescence Girls in Mirpur of Dhaka, Bangladesh

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## Abstract

*Anaemia caused by iron deficiency is a major nutritional problem in the world. The young children and women of childbearing age are most vulnerable stage of growing life. The purpose of the study was to explore the haemoglobin level of the health seekers or unhealthy adolescence girls. It was a descriptive type of cross sectional study and sample size 200. Data imputed and analyzed using SPSS 16 version. Among the respondents 40.5% was in the age group of 10 to 13 years, 32% was in 14 to 16 years and 27.5% was in 17 to 19 years with their mean age ± SD (14.56 ± 2.6). Up to class five studied respondents were 13% and 25% studied in class eleven and above. Majority of the respondents (82.5%) were Muslims and only 1% was Chakma. Most of the participants (65.5%) lived in urban area and 8.5% lived in urban slam. Maximum respondents' (44%) monthly family income was from 25,000 to 50,000 BDT. Only 5% family's income was more than 1,50,000 BDT and 11% family earned not more than 25,000 BDT per month. Haemoglobin level was minimum 9.3 gm/dl, maximum 15 gm/dl and mean ± SD was 12.26 ± 1.16 gm/dl who lived in urban area. Among the rural participants, haemoglobin was almost same to urban. But haemoglobin found minimum 11.2%, maximum 13.6% with mean ± SD 12.31±0.75 among the urban slum subjects. 36.5% respondent came with fever and 14% pregnancy.*

Keywords: *Adolescent, haemoglobin, unhealthy, prevalence*

**Introduction:**

Anaemia is a major nutritional problem globaly and it is caused by iron deficiency.The highest prevalence of anaemia among young children and women of childbearing age; particularly in pregnant women[1]. The prevalence of anaemia is disproportionately high in the developing countries like Bangladesh, India, Pakistan, Nepal and so on. Due to poverty, inadequate diet, worm infestations, pregnancy/lactation and poor access to the health services raised the prevalence of anaemia[2]. World Health Organization has defined 'adolescence' as a period between 10 and 19 years[3]. Adolescence in girls has been recognized a special period of transition from girlhood to womanhood. Adolescent girls constitute one fifth of the female population in the world. Adolescence is a vulnerable period in the human life cycle for the development of nutritional. Nutritional anemia is one of the major public health threats in the developing countries like Bangladesh, India, Pakistan, Nepal and so on. It makes global health problems and contributes to maternal and foetal mortality and morbidity in future. The pre-pregnancy nutritional status of young girls is important as it impacts on the course and the outcome of their pregnancy. Hence, the health of adolescent girls demands the special attention. The highest prevalence of iron deficiency anaemia, even though 60 to 70 percent of the adolescence girls being anaemic in India.[4] Adolescence marks the beginning of the menstrual cycle or reproduction for the females. Adolescents gain 30% of their adult weight and more than 20% of their adult height between 10-19 years, which we call as growth spurt[5].

**Methods and Materials:**

Descriptive type of cross sectional study was conducted to find the level of haemoglobin of unhealthy and health seeker adolescent girls in Mirpur of Dhaka, Bangladesh. The girls who signed on consent paper and agree to give blood sample. The data were collected since 15 April to 15 May, 2017 and the sample size was 190. Data were entered and analyzed using SPSS software 16 version.

**Operational definition:**

**Adolescent:** Considerable age between 10 to 19 years in this study

**Unhealthy:** Sick or feeling weakness in physically and/or mentally

**Health seeker:** Come to the doctors and take advice(s)

**Anaemia:** Haemoglobin level up to 11.5 g/dl (Bangladesh perspective)

**Results:**

**Table 1: Distribution of socio-demographic characteristics of the respondents (N=200)**

| Variables | | Frequency | Percentage |
|---|---|---|---|
| Age (in years) | 10 to 13 | 81 | 40.5 |
| | 14 to 16 | 64 | 32 |
| | 17 to 19 | 55 | 27.5 |
| | Mean ± SD | 14.56 ± 2.6 | |
| Education (Number in class) | 1 to 5 | 26 | 13 |
| | 6 to 10 | 124 | 62 |
| | 11 & above | 50 | 25 |
| Religion | Islam | 165 | 82.5 |
| | Hindu | 28 | 14 |
| | Chakma | 2 | 1 |
| | Cristian | 5 | 2.5 |
| | **Total** | **200** | **100** |

Among the total 200 respondents majority of them were (40.5%) in the age group of 10 to 13 year, 32% and 27.5% respondents were in the age group of 14 to 16 and 17 to 19 respectively. Most of the respondents' education levels were from class six to ten. Only 13% participants' education was up to class five. Among the participants mostly (82.5%) was Muslims, 14% Hindu, 2.5% Christian and only 1% was Chakma.

**Table 2: Showing the frequency and percentage of the participants regarding the level of haemoglobin (N=200)**

| Condition | Haemoglobin (g/dl) | Frequency | Percentage |
|---|---|---|---|
| Severe | ≤ 7 | 0 | 0 |
| Moderate | 7.1 to 9 | 0 | 0 |
| Mild | 9.1 to 11.5 | 48 | 24 |
| Normal | ≥ 11.6 | 152 | 76 |
| | **Total** | **200** | **100** |

Found from table 2 there was no subject to suffer from anaemia in severe and moderate conditions. Most of the respondents (76%) found in normal haemoglobin and 24% in mild condition.

**Table 2: Distribution of the respondents according to the geographic and economic characteristics (N=200)**

| Variable | | Frequency | Percentage |
|---|---|---|---|
| Living area | Urban | 133 | 66.5 |
| | Rural | 50 | 25 |
| | Urban slam | 17 | 8.5 |
| Monthly family Income (In BDT) | Up to 25000 | 22 | 11 |
| | 25001-50000 | 88 | 44 |
| | 50001-75000 | 39 | 19.5 |
| | 75001-100000 | 26 | 13 |
| | 100001-125000 | 4 | 2 |
| | 125001-150000 | 11 | 5.5 |
| | More than 150000 | 10 | 5 |
| **Total** | | **200** | **100** |

The results showed that 66.5% respondents lived in urban area, 25% in rural and 8.5% s lived in urban slam. Family's monthly income level of the 44% participants was between 25,000 taka to 50,000 taka. Among the study population 5% family's monthly income was more than 1,50,000 taka. On the contrary, 11% family's monthly earning was up to 25,000 taka.

**Table 3: Distribution of the respondents according to their haemoglobin level on the basis of their living area (N=200)**

| Living area | Participants | | Level of haemoglobin | | | |
|---|---|---|---|---|---|---|
| | Number | Parcentage | Minimum | Maximum | Mean | SD |
| Urban | 133 | 65.5 | 9.3 | 15 | 12.26 | 1.16 |
| Rural | 50 | 25 | 9.1 | 14.7 | 12.39 | 1.36 |
| Urban slam | 17 | 8.5 | 11.2 | 13.6 | 12.31 | 0.75 |

Majority of the respondents (65.5%) lived in urban area and their haemoglobin status found as maximum 15 gm/dl, minimum 9.3 gm/dl and mean ± SD was 12.26 ± 1.16. Among the participants 25% lived rural area and their haemoglobin level was almost same as urban study population. Maximum haemoglobin level found 13.6 gm/dl, minimum 11.2 gm/dl and mean ± SD (12.31 ± 0.75) in 8.5% study subjects who lived in urban slam.

**Table 4: Distribution of the respondents on the basis of their diseases (N=200)**

| Variables | Frequency | Percentage (%) |
|---|---|---|
| Abdominal pain | 9 | 4.5 |
| Fistula | 2 | 1 |
| Headache | 6 | 3 |
| Pancreatitis | 2 | 1 |
| UTI | 4 | 2 |
| Vomiting | 2 | 1 |
| Allergy | 18 | 9 |
| Anal fissure | 4 | 2 |
| Ankylosing spondilitis | 2 | 1 |
| Apendicitis | 8 | 4 |
| Asthma | 7 | 3.5 |
| Dengue | 15 | 7.5 |
| Diabetes | 6 | 3 |
| Epilepsy | 2 | 1 |
| Fever | 73 | 36.5 |
| Jaundice | 6 | 3 |
| Polycystitis | 2 | 1 |
| Pregnancy | 28 | 14 |
| Rheumatic fever | 4 | 2 |
| **Total** | **200** | **100** |

We know fever is not a disease. It is a symptom of other diseases. Researcher considered as diseases which were come from the respondents as chief complains. We found from table 4 that the highest (36.5%) prevalence were in fever, second highest percentage were 14% in pregnancy. Allergy also found very common among the participants that was 9%. In the study period dengue also found 7.5%, abdominal pain 4.5% and asthma found 3.5%. Besides, fistula, pancreatitis, ankylosing spondilitis, epilepsy and polycistitis each of them found 1% but headache, jaundice and diabetes individually was found 3% among the respondents.

**Figure 1: Distribution of the respondents regarding their marital status (N=200)**

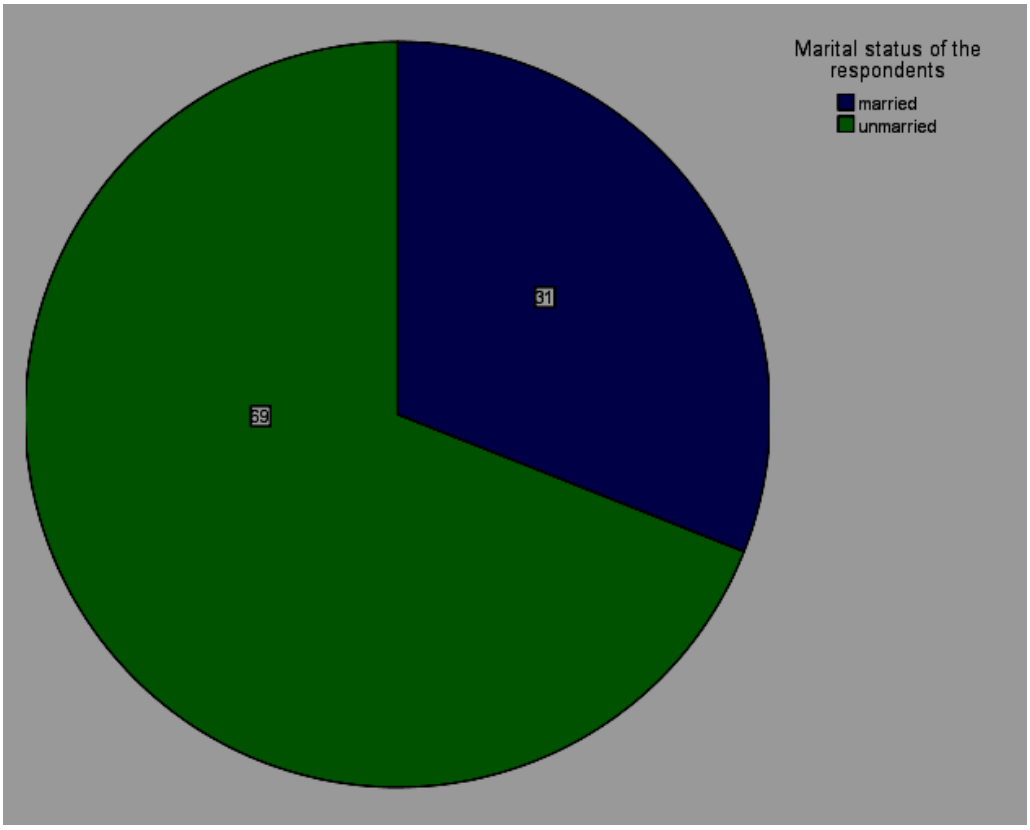


Figure 1 showed 31% was married and 69% was unmarried among the respondents.

**Discussion:**

Anemia is one of the major public health threats globally specially in developing countries like Bangladesh and adolescence is a vulnerable period in the human life cycle for the development of nutritional. This study found the majority participants (40.5%) was in the age group of 10 to 13 years. This study found 24% respondents in mind anaemic and normal 76%, but no severe and moderate anaemic. But in Maharashtra, India found 55% adolescents anaemic, 2% in severe and 11% in moderate and normal 45%[6]. Another study found the higher prevalence of anaemia 90.1% with 7.1% having severe anaemia[7]. Most of the participants (65.5%) lived in urban area and 8.5% lived in urban slam. Maximum respondents' (44%) monthly family income was from 25,000 to 50,000 BDT. Only 5% family's income was more than 1,50,000 BDT and 11% family earned not more than 25,000 BDT per month. Haemoglobin level was minimum 9.3 gm/dl, maximum 15 gm/dl and mean ± SD was 12.26 ± 1.16 gm/dl who lived in urban area. Among the rural participants haemoglobin was almost same to urban. But haemoglobin found minimum 11.2%, maximum 13.6% with mean ± SD 12.31±0.75 among the urban slum subjects. 36.5% respondent came with fever and 14% pregnancy.

**Conclusion:**

Anaemia caused by iron deficiency is a major nutritional problem in the world. The young children and women of childbearing age are most vulnerable stage of growing life. Anaemia is a great problem in the developing countries, also a major public health threat for the global. In the present 31% adolescent got married and 14% was pregnant among them. In the study did not get any significant difference in haemoglobin level among the urban and rural participants adolescence.

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