Research Article

Awareness and Preventive Practice of Iron Deficiency Anemia among Pregnant Women in Bangladesh

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Abstract

Background: The most common cause of anemia is iron deficiency, which is responsible for about fifty percent anemia during pregnancy in the world. According to Bangladesh Bureau of Statistics, iron deficiency anemia affects 46% of pregnant women, and 33% of non-pregnant women.

Objectives: This study was aimed to examine the relationship between the awareness and preventive practices of iron deficiency anemia among pregnant women in Bangladesh.

Methods: A descriptive type of correlational study design was used. A total of 102 participants were selected with the convenient sampling technique. The data collection period was from February 2022 to March 2022. The data was collected from the participants by face-to-face interview by using structured questionnaire. Data was analyzed by using descriptive, Pearson correlation, t-test and one way ANOVA statistics.

Results: Finding of the study shows that the mean awareness of iron deficiency anemia was 7.92 (SD= 1.81) and the total mean of preventive practice was 31.6 (SD= 4.22) respectively. It indicates that the awareness and preventive practice among pregnant women were at a moderate level. In bivariate analysis, it has been showed that residence (t= -1.95, p=.002), educational qualification (f=5.05, p= .003), religion (t= -3.21, p= .013), were statistically significantly correlated with preventive practice of iron deficiency anemia.

Conclusion: Overall awareness and preventive practice of iron deficiency anemia among pregnant women in Bangladesh was a moderate level and residence, religion and educational status were statistically significantly correlated with preventive practice of iron deficiency anemia.

Keywords: Awareness; Preventive Practice; Iron Deficiency Anemia; Pregnant Women

Introduction

Iron Deficiency Anemia (IDA) is a disorder characterized by significant decrease of iron storing in the body as a result to extrinsic and intrinsic factors and this type of anemia is hypochromic and microcytic [1]. Pregnancy is a period of high demand on iron requirement due to physiological changes in maternal red blood cell mass and increasing needs of fetal and placental development [2]. Iron deficiency anemia is a major global public health problem that affects maternal and child mortality, physical performance, and referral to health-care professionals especially in pregnant women and women of childbearing age [3].

Globally, the most common nutritional deficiency anemia is due to iron deficiency which affects more than two billion people [4]. Worldwide, more than twenty percent of women experiencing iron deficiency anemia during their reproductive age [5]. Iron deficiency is the most dominant single deficiency state in the world and IDA is currently estimated to affect more than 500 million people [6]. Worldwide, the most common cause of anemia is iron deficiency, which is responsible for about fifty percent anemia during pregnancy [2]. A major

public health concern is anemia with the dominance of 9% in developed countries whereas it is more than 40 percent in developing countries. Iron deficiency anemia is the most prevalent and commonest type of micronutrient deficiency in the developing countries [7]. In Bangladesh, the anemia prevalence has remained constant for last few decades which are at more than 70% that indicates a high rate of anemia. A recent study in Bangladesh shows that 74% women did not take iron supplementation during their pregnancy period because of their poor awareness [8]. According to international criteria, anemia is a severe public health concern (prevalence of 40% or more) in pregnant women and a moderate problem (prevalence between 20 - 39%) in non- pregnant women of reproductive age [9]. According to Bangladesh Bureau of Statistics, iron deficiency anemia affects 46% of pregnant women, and 33% of non- pregnant women [10].

The commonest cause of anemia is iron deficiency with evidence suggesting that up to 90% of maternal anemia are due to inadequate dietary intake of iron, hookwarm infestations, bleeding haemorrhoids, deficiency of vit (B12 and B6), genetic disorder such as sickle-cell anemia, and HIV infections during pregnancy period [11]. Anemia poses major impacts to maternal and child health, contributes to LBW, lowered resistance to infection, poor cognitive and psychomotor development, decreased work productivity, it also effects on quality of life, significant economic losses for both individual and country which impacts are estimated about 7.9 percent of Bangladesh GDP [9].

Awareness and household practices of women towards the prevention of iron deficiency anemia may encourage women to take iron supplements during pregnancy and after childbirth [4]. Proper dietary education, changing food habit and awareness can take crucial role to prevent iron deficiency anemia that needs to be tackled seriously by health care providers, especially at the primary level like community by adequate iron supplementation [1]. Recently, a study in Bangladesh shows that only 23 percent reproductive age group women have enough awareness level on this topic [8]. Health care providers must emphasis on awareness of iron deficiency anemia during pregnancy by enhancing healthy dietary habits as a part of a health promotion strategy. Proper awareness and educational programs regarding dietary habit and changing lifestyle pattern during pregnancy can reduce the prevalence rate of iron deficiency anemia [1].

According to World Health Organization, 2017 recommendations to achieve the sustainable development goals, one of the strategic objectives are increasing awareness have got a great importance especially on malnutrition like anemia. Awareness and preventive practice of anemia in pregnant women is considerably low the major public health problem. In Bangladesh, most of the previous researcher's conducted prevalence and factors related to iron deficiency anemia (IDA) [12]. Some studies carried out in Bangladesh, to explore the knowledge of iron deficiency anemia in Bagerhat, Dhaka, Noakhali and Cox'sBazar district but there are limited research in Rajshahi district of Bangladesh regarding preventive practice of iron deficiency anemia Therefore, it is necessary to conduct a study to focus on preventive practices of iron deficiency anemia among pregnant women in Rajshahi district of Bangladesh. The findings of this study will be used to draw attention of government and health care provider to develop strategies and appropriate intervention program to increase preventive practice of iron

deficiency anemia among pregnant women.

Methods

Study design: A descriptive correlational study design was carried out to investigate the awareness and preventive practice of iron deficiency anemia among pregnant women attending in antenatal care department at Rajshahi Medical College Hospital in Rajshahi. The study was conducted from July 2021 to June 2022.

Study participants: The study participants were pregnant women who were come to periodical checkup or follow up for antenatal care of Out Patient Department (OPD) of Rajshahi Medical College Hospital in Bangladesh.

Sampling technique and sample: The convenient sampling technique was used to select participants. The sample size was estimated by G power analysis in which accepted significant level (α) 0.05, an expected power 0.8 (1-β) and the effect sizes 0.3. The actual sample size was 84. To reduce the attrition rate 20% more samples was added. Therefore, the total sample of this study was 102.

Data collection Instruments: The instrument for data collection was consist of 3 parts. Part 1: Socio-demographic questionnaire for pregnant woman; part 2: Awareness of iron deficiency anemia related questionnaire; part 3: Preventive practice of iron deficiency anemia related questionnaire. The questionnaire was developed by the researcher based on the literature review. A total of 37 items structured questionnaire was used to assess the awareness and preventive practice of iron deficiency anemia. Socio-demographic questionnaire: A 12 items socio demographic and obstetric history related questionnaire was used to measure the characteristics of the pregnant women. Awareness of iron deficiency anemia related questionnaire: A 15 items awareness of iron deficiency anemia questionnaire with a yes, no and don't know option was used to examine the relationship between the awareness level of iron deficiency anemia. The score was ranged from 0 to 15. Each correct answer receives 1 point while an incorrect receives 0 points. Awareness was categorized into three levels: low, moderate and high. A high score indicates high level of awareness regarding iron deficiency anemia. In this study, I. High awareness = >11 – 15. II. Moderate awareness = >7- 11. III. Low awareness = < 7.

The preventive practice of iron deficiency anemia related questionnaire: A 10 items preventive practice of iron deficiency anemia related questionnaire was used to measure the pregnant women's preventive practice level which was developed by the researcher based on a literature review. The participants were asked to rate their opinion using a 5-point Likert scale ranging from 1= Never to 5= always. The score was ranged from 10 to 50 and converted into a percentage. A high score indicates a high level of preventive practice.

Data collection methods: Data was collected after obtaining approval from the Institutional Review Board (IRB) (Exp.-NIA-S-2020/124) at the NIANER and Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh. The permission was taken from the Director of Rajshahi Medical College Hospital, Rajshahi and the participants. Data was collected through face-to-face interview by using structured questionnaire.

Table 1: Distribution of socio-demographic characteristics of pregnant women. (N=102).

	Variables	Frequency (%)			M ±SD
	Age Range: 16-35 years				23.18±4.429
	Residence				
	Rural	80 (77.7)			
	Urban	22 (21.4)			
	Monthly Income			22921±4028.8	
	Religion				
	Islam	95 (92.2)			
	Hindu	07 (6.8)			
	Educational qualification				
	Primary	42 (40.8)			
	Secondary	41 (39.8)			
	Higher Secondary	8 (7.8)			
	Above H.S.C	11(10.7)			
	Job Status				
	Housewife	98 (95.1)			
	Private	3 (2.9)			
	Govt.	1 (1.0)			
	Number of Total Pregnancy				
	1-2	86 (84.3)			
	>2	16 (15.5)			
	Trimester of Pregnancy				
	3rd	57 (55.3)			
	2nd	45 (43.7)			
	Number of live child birth				
	1-2	101(99)			
	>2	1 (1.0)			
Years of child spacing					
> 2 yrs			47 (46.1)		
No child yet			47 (46.1)		
< 2 yrs			8 (7.8)		
Weight in Kg					60.73 ±9.019
Height in cm					156.08 ± 8.71

Data analysis: The collected data was analyzed using a computer software program (SPSS version 23). Descriptive statistics such as frequency, percentage, mean & standard deviation was used to describe the demographic characteristics of the participants. Inferential statistics such as one- way ANOVA, Independent t-test and Pearson correlation test was used to examine the relationship among socio-demographic, awareness and preventive practice. Results was evaluate using 95% confidence interval and the level of significance was set at $P<0.05$.

Results

Table 1. The findings revealed that the mean age of the participants was 23.18 (SD= 4.429) years which ranging from 16-35 years. Most of the participants 99 (96%) were Muslim, 3(2.9%) were Hindu. Among the participants 80 (77.7%) were from rural area and 22 (21.4%) were from urban. The average monthly family income was 22921 BDT (SD= 4028.8). The educational qualification of the participant was primary 42 (40.8%), secondary 41 (39.8%), H.S.C and above were 19(18.4). Most of the participants 98 (95.1%) were housewife, 3(2.9 %) private job whereas only 1(1.0%) was Government Job. The findings revealed that the number of one to two pregnancy of the participants was 86 (84.3%), above two pregnancy of the participants was 16 (15.5%) and also the number of one to two live child birth was 101(99%), the number of above two live child birth was 1(1.0%) only. The mean of height and weight of the participants was 156.08 and 60.73 and SD ± 8.71 and 9.019.

2. Awareness level of iron deficiency anemia among pregnant women

Table 2 shows the distributions of frequency, percentage, mean and SD of awareness level of the participants on iron deficiency anemia. Based on item analysis, results reflected that the majority of the participants had incorrect answer regarding, Iron deficiency anemia (IDA) is a disorder characterized by significant decrease of iron lower than normal. (55.3%), Iron deficiency anemia is a preventable disorder (52.4%), Multiple pregnancies are one of the risk factors of iron deficiency anemia (93.2 %), Iron deficiency anemia can be prevented by modifying eating habit (69.9%), Drinking tea and coffee interrupt to absorption of iron (93.2%), Some food can inhibit to utilize iron (89.3%), Birth spacing can prevent iron deficiency anemia (96.1%), Sedentary Iron deficiency anemia has fatal effect on mother and child (99.0%). In contrast, most of participants had correct awareness regarding Shortness of breath, weakness, dizziness, fatigue; loss of appetite is the symptoms of iron deficiency anemia (83.5%), Iron deficiency anemia diagnosed by haemtological test (98.1%), Using iron and folic acid supplementation food may help to lower iron deficiency anemia (74.8%), Iron containing foods are – green leafy vegetables, fruits, liver (79.6%), vitamin C containing foods such as orange, strawberry, and tomato may help to absorption of iron (68.0%), Iron deficiency anemia can cause life threatening related complication on mother and baby during delivery (72.8%). The result showed that the total mean score of iron deficiency anemia awareness was 7.92 (SD= 1.81) out of maximum score of 15 points which indicate moderate level of awareness.

Distribution of iron deficiency anemia preventive practice among pregnant women

Table 3, it shows the distribution of participant's level of preventive practice of iron deficiency anemia among pregnant women. The findings of the present study, the mean preventive practice score of iron deficiency anemia was found as 31.6

Table 2: Distribution of awareness level of iron deficiency anemia preventive practice among pregnant women. (N=102).

Variables	Correct N (%)	Incorrect N (%)	M±SD
Iron deficiency anemia (IDA) is a disorder characterized by significant decrease of iron lower than normal.	45 (43.7)	57 (55.3)	.44±.50
IDA is a hereditary disorder.	67 (65.0)	35 (34.0)	.66±.48
IDA is a preventable disorder.	48 (46.6)	54 (52.4)	.47±.50
Shortness of breath, weakness, dizziness, fatigue, loss of appetite is the symptoms of iron deficiency anemia.	86 (83.5)	16 (15.5)	.84±.36
IDA diagnosed by haemtological test.	101(98.1)	1 (1.0)	.99±.09
Using iron and folic acid supplementation food may help to lower IDA.	77 (74.8)	25 (24.3)	.75±.43
Multiple pregnancies are one of the risk factor of IDA	6 (5.8)	96 (93.2)	.06±.23
IDA can be prevented by modifying eating habit	30 (29.1)	72 (69.9)	.29±.46
Iron containing foods are – green leafy vegetables, fruits, liver.	82 (79.6)	20 (19.6)	.80±.31
Drinking tea and coffee interrupt to iron absorption.	6 (5.8)	96 (93.2)	.06±.23
Some food can inhibit to utilize iron.	10 (9.7)	92 (89.3)	.10±.29
Vitamin C containing foods such as orange, strawberry, and tomato may help to iron absorption.	70 (68.0)	32 (31.1)	.69±.46
Birth spacing can prevent iron deficiency anemia.	3 (2.9)	99 (96.1)	.03±.17
IDA has fatal effect on mother and child.	0	102 (99.0)	1.0±.00
IDA can cause life threatening related complication on mother and baby during delivery.	75 (72.8)	27 (26.2)	.74±.44
Total Mean score of awareness level			7.92± 1.81

Table 3: Distribution of iron deficiency anemia preventive practice among pregnant women.

Variables	Never N (%)	Seldom N (%)	Sometime N	Often N (%)	Always N (%)	M ±SD
I attend antenatal clinic for checkup anemia status.	33 (32)	39(37.9)	25(24.3)	3 (2.9)	2 (1.9)	2.04±.933
I take iron supplementation to prevent IDA according to doctor's advice.	14(13.6)	6 (5.8)	27(26.2)	34 (33)	21(20.4)	3.41±1.27
I take folic acid supplementation to prevent IDA according to doctor's advice.	49(47.6)	9(8.7)	8(7.8)	23(22.3)	13(12.6)	2.43±1.56
I use three meals to meet up nutritional demand.	0	0	0	6 (5.8)	96(93.2)	4.94± .236
I eat fish, meat, chicken and liver.	0	28(27.2)	64(62.1)	10 (9.7)	0	2.82± .587
I eat all kinds of green leafy vegetables.	0	0	22(21.4)	32(31.1)	48(46.6)	4.25± .792
I eat all kinds of seasonal fruits.	0	52(50.5)	43(41.7)	6 (5.8)	1(1.0)	2.57± .653
I usually keep fiber containing food in my menu.	9(8.7)	74(71.8)	18(17.5)	1 (1.0)	0	2.11± .543
I eat vitamin C containing fruits such as lemon, amloki, green chili etc.	3(2.9)	41(39.8)	47(45.6)	11(10.7)	0	2.65± .713
I avoid drink tea and coffee after eating.	3 (2.9)	12(11.7)	6(5.8)	3 (2.9)	78(75.7)	4.38±1.19
Total mean score of preventive practice		**31.6±4.22**				

(SD= 4.22) out of a maximum of 50 points which indicates a moderate level of preventive practice. Majority of the participants never eat fiber containing foods in their menu (71.8%). Above half of the participants sometimes eat fish meat, chicken and liver (64%).More than half of the participants seldom eat all kinds of seasonal fruits (50.5%). Less than half of the pregnant women never use folic acid supplementation according to doctor's advice (47.7%) and (45.6 %) pregnant women sometimes eat vitamin C containing fruits such as lemon, amloki, green chili etc. Majority of the pregnant women always use three meals to meet their nutritional demand (93.2%). Above half of the pregnant women always avoid drink tea and coffee after eating (75.7%). Less than half of the participants always eat all kinds of green leafy vegetables (46.6%).

Relationship between socio-demographic characteristics and preventive practice of iron deficiency anemia

Table 4 showed the relationship between socio-demographic characteristics preventive practice of iron deficiency anemia among pregnant women. Bivariate analysis was done to examine the relationship between socio-demographic characteristics and preventive practice of iron deficiency anemia among pregnant women. The study revealed significant relationship between preventive practice and residence of the participant

(t= -1.95, P= .002). The study result found that the religion was related with preventive practice (t = -3.21, p = .013). It means that the religion of Islam pregnant women was good preventive practice about iron deficiency anemia. The study findings also revealed that the educational qualification was significantly related with preventive practice (f=5.05, p= .003). The rest of the variables were non-significant towards preventive practice of iron deficiency anemia. The result showed that the total awareness score of iron deficiency anemia was (r =.341, p =0.001) which was very significantly correlated with preventive practice.

Discussion

This study provides emphasis into examine the relationship between awareness and preventive practice of iron deficiency anemia among pregnant women in Bangladesh. The finding of this study shows that pregnant women have moderate level of awareness and preventive practice of iron deficiency anemia. The study findings revealed that the mean age of the participants were 23.18 years which ranging from 16-35 years. This finding similar with a study conducted in Western- North Region, Ghana [11]. The present study findings indicated that the majority of the participants were from rural areas. In contrary other previous studies found that most of the participants were

Table 4: Relationship between socio-demographic characteristics and preventive practice of iron deficiency anemia among pregnant women. (N=102).

Variables	Preventive Practice	
	M±SD	t/F/r (P)
Age		0. 13(.16)
Residence		
Rural	1.64±.534	-1.95(.002)
Urban	1.86±.468	
Monthly Income		0.19(.051)
Religion		
Islam	1.65±.521	
Hindu	2.14±.378	-3.21(.013)
Educational qualification		
Primary	1.55±.504	
Secondary	1.78±.525	5.05(.003)
Higher Secondary	1.38±.518	
Above H.S.C	2.09±.302	
Number of Total Pg.		
1-2	1.69±.515	-0.01(.99)
>2	1.69±.602	
Trimester of Pregnancy		
3rd	1.65±.551	.801(.42)
2nd	1.73±.495	
Years of child spacing		
> 2 yrs	1.68±.515	
No child yet	1.68±.556	0.06(.93)
< 2 yrs	1.75±.463	
Weight in Kg		-0.18(.28)
Height in Cm		-0.07(.46)
Total Awareness		.341 (0.001)

from urban areas [13; 2]. In this study average monthly family income were 22921 BDT that indicates medium level of income which was dissimilar with other national study conducted in Savar and Dhaka city [14; 8]. The study results showed that the majority of the participants were Muslim. Which was conversely dissimilar with other study conducted in India, result shows that majority of the participants were Hindu [4]. In this study also explored that the majority of the participant's educational status was primary and secondary. The same result was found in a previous study in Western-North Region, Ghana by Appiah et al., 2019. Inadequate educational status may impact awareness level and preventive practices of iron deficiency anemia. This current study identified that most of the study subject's job status were housewives. Rizwan et al., 2021 conducted a study in Coxsbazar, Bangladesh and Tashara et al. conducted a study in India their study report also showed that most of the participants were housewives. The current study result showed that majority of the participant's number of total pregnancy or gravida were one to two. Another study conducted in Saudi Arabia and Ethiopia by Aboud et al., 2019; Oumer et al., 2019 their study findings also nearly consistent with the current study. This study found that number of live child birth or parity was one to two. Similar findings also found in other study conducted in Ethiopia and India [2; 4]. In this current study near about fifty percent participants years of child spacing were two and more than two years which was similar with another study conducted in India by Tashara et al., 2015. In opposite, a study conducted in Ethiopia results showed that more than fifty percent participants had no child before [2].

This study found that majority of the participants had moderate level of awareness regarding iron deficiency anemia. In contrast, another previous study was conducted among pregnant women in Ghana. A descriptive type of cross-sectional study was conducted to assess the pregnant women's adherence to anemia prevention strategies. The finding showed that the majority of the participants had a moderate level of awareness [11]. In opposite, some cross-sectional study conducted in Bangladesh and their results reported that maximum pregnant women have poor awareness regarding prevention of iron deficiency anemia [14; 13]. Thus, creating awareness among pregnant women through the implementation of health education program regarding iron containing food, importance of regular intake of iron supplementations and complications of effects of iron deficiency anemia during pregnancy will prevent or at least reduce the incidence of IDA and thereby maternal mortality [1].

In this current study majority of the participants had low level of awareness regarding the following item of awareness related questionnaire - iron deficiency anemia, multiple pregnancies are the risk factor, modifying eating habit, drinking tea and coffee interrupt to iron absorption, birth spacing and IDA has a fatal effect on mother and baby. These results are nearly consistent with other studies conducted in Ethiopia and Saudi Arabia [2; 1].

Anemia prevention strategies plays a major role in the prevention of IDA particularly among pregnant women whose iron requirement increases at the second trimester and progresses until the third trimester [11]. Concerning the preventive practices of IDA, the finding of the present study showed that the participants had a moderate level of preventive practice. In contrary, a study conducted in Saudi Arabia and they reported that majority of the pregnant women have poor practices regarding prevention of IDA [2]. The finding of this current study showed that only twenty percent participants take iron supplements.The present study revealed that more than half of the participants seldom eat seasonal fruits and fiber containing foods in their menu. These results are similar with previous study done in Saudi Arabia [1]. In this study, majority of the participants always use three meals to meet up their nutritional demands and eat all kinds of green leafy vegetables often and always. This finding was similar a study conducted in Ethiopia [2]. The current study showed that most of the participants avoid drinking tea and coffee after meal during their pregnancy where as Aboud et al.,2019 a study conducted in Saudi Arabia they documented that more than half of their study participants to have habit of drinking tea and coffee immediately after meal. The study results showed that there was a strong statistically significant relationship between awareness and preventive practice among pregnant women. Those participants had high level of awareness their preventive practice level was also high (p= 0.001). These findings were in harmony with other studies conducted in Ghana and Ethiopia [11; 2]. This study revealed significant relationships among pregnant women's residence, religion and educational status with preventive practice. The current study showed that residence and preventive practice were significantly related (p = .002). Another previous study also noted the significant relationship between residence and preventive practice [11].

Surprisingly, this current study found that religions was statistically significant relationship with preventive practice (p = .013) which was inconsistent with other study conducted in Ghana. This incongruity may be due to, in this study most of the participants were religion of Islam, different cultural background and geographical locations. The finding indicated that

the participant's educational status and preventive practice of iron deficiency was significantly related (p = .003). This finding is similar to another study conducted in Ghana by Appiah et al., 2021 to assess the pregnant women's adherence to anemia prevention strategies. There were no significant relationships found between preventive practices and age, job status, Number of total pregnancy, trimester of pregnancy, number of live child birth, years of child spacing, weight in kg and height in cm. The findings of the study conclude that there is a need to improve the awareness level of the rural women which in turn enhances their preventive practice.

Conclusion

Overall awareness and preventive practice of iron deficiency anemia among pregnant women in Bangladesh was a moderate level and residence, religion and educational status were statistically significantly related with preventive practice of iron deficiency anemia. Health care researcher can use this baseline data to make some strategy for increasing awareness and preventive practice among pregnant women in Bangladesh. It is not difficult to prevent iron deficiency anemia if health care provider implement proper strategy prepared by the policymaker. So, it is essential to give more focus about this issue through increasing the awareness. Hence, more efforts are needed to increase the awareness and preventive practice of iron deficiency anemia in pregnancy as it could be detrimental to mother and baby as well as the community and the country as a whole.

Conflict of Interest: There is no conflict of interest.

References

1.   Aboud SAEH, El Sayed HAE, Ibrahim HAF. Knowledge, Attitude and Practice Regarding Prevention of Iron Deficiency Anemia among Pregnant Women in Tabuk Region. International Journal of Pharmaceutical Research & Allied Sciences, 2019; 8(2).

2.   Oumer A, Hussein A. Knowledge, attitude and practice of pregnant mothers towards preventions of iron deficiency anemia in Ethiopia: institutional based cross-sectional study. Health Care Current Reviews, 2019; 7(1): 2381-2387.

3.   Lopez A, Cacoub P, Macdougall IC, Peyrin-Biroulet L. Iron deficiency anaemia. The Lancet, 2016; 387(10021): 907-916.

4.   Tashara IF, Achen IF, Quadrus R, D Souza MV, D Souza PJJ, Anu S. Knowledge and self-reported practices on prevention of iron deficiency anemia among women of reproductive age in rural area. Hindu, 2015; 92: 76-86.

5.   Percy L, Mansour D, Fraser I. Iron deficiency and iron deficiency anaemia in women. Best practice & research Clinical obstetrics & gynaecology, 2017; 40: 55-67.

6.   Hussain T, Shu LY. Awareness of iron deficiency anemia among women of Reproductive age in Hubei Province, China. Asian Journal of Medical Sciences, 2010; 1(1): 12-13.

7.   Alkhaldy HY, Hadi RA, Alghamdi KA, Alqahtani SM, Al Jabbar I, Al Ghamdi IS, et al. The pattern of iron deficiency with and without anemia among medical college girl students in high altitude southern Saudi Arabia. Journal of family medicine and primary care, 2020; 9(9): 5018–5025.

8.   Sultana T, Jahan I, Sarker MJA, Ferdous K, Shamsuddin AK, Ahmed MR. Assessment of Knowledge about Iron Deficiency Anemia among the Adult Women in Selected Hospitals of Dhaka City. Journal of Advances in Medicine and Medical Research, 2021; 78-84.

9.   Rashid M, Flora MS, Moni MA, Akhter A, Mahmud Z. Reviewing Anemia and iron folic acid supplementation program in Bangladesh-a special article. Bangladesh Medical Journal, 2010; 39(3).

10.   Floral MS, Islam MS. Anemia in Bangladesh: a long-standing, preventable public health problem. Bangladesh medical journal, 2010; 39(3).

11.   Appiah PK, Nkuah D, Bonchel DA. Knowledge of and adherence to Anaemia prevention strategies among pregnant women attending antenatal care facilities in Juaboso district in Western-north region, Ghana. Journal of Pregnancy, 2020.

12.   World Health Organization. Nutritional anaemias: tools for effective prevention and control, 2017.

13.   Rizwan AAM, Hasan F, Huda MS, Talukder N, Siddique RAH, Anwar A, et al. Knowledge and attitude on anemia among the women attending a Government tertiary level hospital at CoxsBazar, Bangladesh. World Journal of Pharmaceutical Research, 2021; 10(12): 84–94.

14.   Sultana F, Ara G, Akbar T, Sultana R. Knowledge about Anemia among pregnant women in tertiary hospital. Medicine Today, 2019; 31(2): 105-110.