
Adherence to Prophylactic Ferrous Sulphate and Associated Factors Among Pregnant Women Attending ANC Service in Public Health Facilities of Arba-Minch Town, Southern Ethiopia

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Abstract

Background: Ante natal care is a care given for pregnant mothers to ensure the safe progress of the pregnancy. According to the standard of the World health organization, a woman is expected to have at least four ante natal visits before the end of her pregnancy. The purpose of ante natal follow-up is for early identification and treatment of pregnancy related problems that can cost the life of both the mother and the growing fetus. Many health problems affecting varied communities in the world are directly related with deficiency of one or more nutrients. Anemia is a worldwide health problem even though its prevalence is much higher in third world countries especially among women who face an increase in iron demands targeted at satisfying iron requirements of the mother and the fetus. As primary prevention, pregnant women are advised to increase the intake of diets rich in iron such as meat, cereals and varied fruits. Anemia will end in multitudes of effects and complications unless early detection and treatment is there. The effect doubles when it coincides with pregnancy.

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Currently, there is no sufficient information on the magnitude of adherence to prophylactic ferrous sulphate supplementation among pregnant women attending Ante natal care in most public health facilities of Ethiopia and the study area in particular. Therefore, the purpose of this study was to assess the adherence to prophylactic ferrous sulphate among pregnant women attending Ante natal care in Public health facilities of Arba-Minch town, southern Ethiopia. The general objective of this study was to assess adherence to prophylactic ferrous sulphate among pregnant women attending ante natal service in Public health facilities of Arba-Minch town, 2016. In the method section, a health institution based cross-sectional study was conducted in Public health facilities of Arba-Minch Town among 350 pregnant women who have visited public health facilities of Arba Minch town during the study period. Primary data was collected by using structured interviewer administered Amharic version questionnaire. After the data were fully entered to Epi-info version 3.5.1, the analysis was made by using SPSS version 20.0. A bivariate and multivariate logistic regression analysis was performed to identify factors associated with adherence. According to this study, iron intake for a minimum of three months during the whole course of pregnancy was 83(24.06%). In the multivariable analysis, obstetric characteristics were associated with adherence to prophylactic ferrous sulphate supplementation. There was significant association between adherence and gestational age (AOR=8.363 and CI=2.509-27.877). The odds of adherence was 8.363 times higher in the third trimester compared to the respondents in the second trimester. There was also significant association between adherence and the number of ante natal follow-ups (AOR= 2.321 and CI=1.087-4.955). The odds of adherence among the respondents with more than four antenatal follow-ups was 2.321 times higher compared to the respondents with less than or equal to four ante natal follow-ups. As the adherence rate to prophylactic ferrous sulphate among women attending public health facilities in Arba Minch Town was only 24.06%, all health professionals should continuously inform and encourage the pregnant women to increase Ante natal visits.

Key words: Adherence; Prophylactic ferrous sulphate; Pregnant women.

1. Introduction

Ante natal care is a care given for pregnant mothers to ensure the safe progress of the pregnancy. According to the World health organization standard, a woman is expected to have at least four ante natal visits before the end of her pregnancy [1]. The purpose of ante natal follow-up is for early identification and treatment of pregnancy related problems that can cost the life of both the mother and the growing fetus ([2]. Many health problems affecting varied communities in the world are directly related with deficiency of one or more nutrients [3]. Anemia is a worldwide health problem even though its prevalence is much higher in third world countries especially among women who face an increase in iron demands targeted at satisfying iron requirements of the mother and the fetus [1, 4]. As primary prevention to gestational anemia, pregnant women are advised to increase the intake of diets rich in iron such as meat, cereals and varied fruits [5]. Anemia will end in multitudes of effects and complications unless early detection and treatment is there. The effect doubles when it coincides with pregnancy [6]. Anemia is directly related with malnutrition, gastrointestinal problems that directly or indirectly affect food digestion and absorption, physiologic conditions such as pregnancy and congenital abnormalities [2, 3]. More commonly, maternal anemia has been managed by daily providing the iron supplementation in all the course of pregnancy [1,6]. Despite the provision of iron supplementations,

poor adherence with the prophylactic supplementation has been noted [7]. Some of the major reasons behind the poor intake of prophylactic iron supplementation are fear of side effects and poor access to the supplements. The mentioned reasons have hindered the implementation of the intervention which is provided during pregnancy [5,6]. It is very clear that with a problem on adherence to prophylactic ferrous sulphate supplementation, the goal of combating pregnancy related Anemia will not be fully successful [1,7]. An appropriate supply of iron is of an irreplaceable role for expected development of the fetus and newborn child. Iron deficiency and iron deficiency anemia are associated with bad pregnancy outcomes like preterm birth and low birth weight [7]. According to different literatures, the prevalence of anemia during pregnancy is much higher compared to the non-gravid time. As per an study conducted in South Africa, the prevalence was much higher peaking to 42.7%. This high prevalence of gestational anemia is associated with lots of factors [36]. Studies show a significant association between adherence to prophylactic ferrous sulphate and various factors like age of the mother, educational status of the mother, & knowledge of anemia. Therefore, it is good to see the associations in different study population and setting which will aid in generating a very timely evidence [15,33]. Of the many health benefits with appropriate intake of prophylactic iron during pregnancy, good development of the fetal brain and cognitive abilities are the prominent [8]. Children born to iron-deficient mothers will start their lives suffering from iron deficiency or even iron deficiency anemia [7, 8]. Oral iron prophylaxis to pregnant women improves iron status and prevents development of iron deficiency anemia. 30–40 mg of ferrous iron is a minimally adequate dose in most developed societies where individual iron prophylaxis is provided by iron status which is associated with physiological benefits compared to general iron supplementation [8,9]. Contrary to this, in most developing countries, general iron prophylaxis is indicated, and higher doses of oral iron, for example, 60 mg ferrous iron or even more should be recommended, according to the present iron status situation in the specific populations of women of fertile age and pregnant women to reduce the prevalence of iron deficiency anemia and related maternal mortality [5, 10]. Maternal mortality is a major health problem in Sub-Saharan Africa. According to the data from United Nations in 6 May 2014, the number of maternal deaths worldwide has declined to 289,000 in 2013 from 523,000 in 1990. About 60% (179,000) of these deaths occurred in sub-Saharan Africa where the maternal mortality is 510 deaths per 100,000 live births [19, 20]. The above alarmingly high maternal mortality is in contrary to the Millennium development goal five which has been planned to be achieved in 2015 and currently postponed to 2020 [21]. Maternal mortality has many direct and indirect causes Anemia being one [3]. According to the definition provided by the World health organization in 1975, "Anemia is a health condition characterized by insufficiency in the number of red blood cells and/or oxygen-carrying capacity. As a result, the body fails to meet the minimum physiologic demands which differ with age, sex, geographical location, smoking habit, and being pregnant or not. Gestational anemia is a hemoglobin level below 11g/dl." [3,5]. Globally, Iron deficiency is thought to be the leading cause of Anemia. In addition to iron deficiency, certain nutrients' deficiencies like Folate, Vitamin B12 and Vitamin A have significant contribution for the development of Anemia. Finally, the presence of chronic inflammation, parasitic infections and inherited disorders hold a significant share in Anemia development [4, 6]. Historically, pregnant women and children are among the ever vulnerable population for Anemia. This is directly associated with an increase in demand for Iron during pregnancy and insufficiency of bone marrow in producing red blood cells in children [5,9]. Supplementation of prophylactic ferrous sulphate during pregnancy is among the measures taken to manage Iron deficiency Anemia and related maternal morbidity as well as mortality [6,11].

Currently, there is no sufficient information on the magnitude of adherence to prophylactic ferrous sulphate among pregnant women attending Ante natal care in most public health facilities of Ethiopia and the study area in particular. Therefore, the purpose of this study is to assess the adherence to prophylactic ferrous sulphate among pregnant women attending Ante natal care in Public health facilities of Arba-Minch town, southern Ethiopia

2. Materials and Methods

2.1. Study area, design and period

This study was conducted in Arba minch town, Southern Ethiopia. Arba minch town is located 495 KMs South of Addis Ababa and 260km away from Hawassa (i.e. the capital of the SNNPR). A facility based crosssectional study was conducted from March-April 2017 in public health facilities of Arba minch town.

2.2. Population, Sampling Determination and Sampling Procedure

The source population for this study were all pregnant women who have visited public health facilities of Arba Minch town during the study period. The study population comprised 350 sampled pregnant women who were aged 15-49 and attending ante natal care at public health facilities of Arba Minch Town during the study period. Pregnant women who were willing to participate in the study as well as pregnant women who had second and or more ante natal visits were included in this study. On the other side, pregnant women with severe health problem requesting an urgent medical attention were excluded. The sample size was calculated by using single proportion formula where Z was 1.96, P 0.372(37.2%) taken from an study conducted in north western Zone of Tigray[15], margin of error was 5% and confidence interval at 95% level. Finally, the sample size for this study was 393 after adding a 10% nonresponse rate. Since the total pregnant population in Arba-Minch Town was less than 10,000, the correction formula was incorporated and the sample size has been adjusted to 350. Systematic sampling technique was used to select the study participants. A proportional allocation was employed to obtain the respective sampled size of participants from each health facility. One Hospital and two health centers which provide routine Ante natal services for the pregnant women were included.

2.3. Variables and Operational definitions

Adherence to prophylactic ferrous sulphate supplementation among pregnant women attending ante natal care services was the outcome variable of this study. The Independent Variables included; Sociodemographic Characteristics (Age, sex, marital status,...) and Obstetric Characteristics of the pregnant women.

Operational Definitions

Adherence: The practice of taking a minimum of four to five prophylactic ferrous sulphates in a week and/or taking prophylactic ferrous sulphate for more than ninety days during the whole course of pregnancy[14].
Anemia: A deficiency condition where the hemoglobin level in the body is less than 11g/dl and resulting in low

oxygen carrying capacity. Ante Natal Care (ANC): A health programme in the facility where the pregnant woman receives regular check-ups, nutritional supplements and medical as well as nursing cares. Iron Deficiency Anemia (IDA): An status in which the blood lacks sufficient and healthy red blood cells. Iron Deficiency (ID): A condition in which iron level falls below 3g per deci liter of blood. Multigravida: A woman who is or has been pregnant at least for second time. Primigravida: A woman who is or has been pregnant for first time. Supplement: A provision targeted at fulfilling health and or nutritional gaps.

2.4. Data collection methods and tools

Structured Amharic version questionnaire was used to collect the data. The questionnaire was first prepared in English and then translated to Amharic by different qualified individuals. All the questions were close ended. The questionnaire was developed from different literatures and had three different sections: socio demographic section (age, sex, education, occupation, and marital status), obstetric section and adherence section. Primary data was collected from pregnant mothers who were attending Ante natal care during the data collection period by using structured interviewer administered Amharic version questionnaire. Diploma nurses working in the respective health facilities were trained and assigned to collect data from the study participants. The principal investigator has followed the overall data collection process.

2.5. Data Processing and Analysis

After the data are fully entered to Epi-info version 3.5.1, data was analyzed using SPSS version 20.0. Categorical variables were summarized as numbers and percentages, where as normally distributed continuous variables were presented as means and standard deviations. To identify factors associated with the outcome variable (adherence); first a bivariate logistic regression analysis was performed for each independent variable. Then, significant variables observed (those with p-value less than 0.25) in the bivariate logistic regression analysis were subsequently included in the multivariate logistic regression model to determine independent predictors for the outcome variable among the pregnant women attending Ante natal care. All tests were one sided and p value less than 0.05 was considered statistically significant.

3. Results

3.1. Sociodemographic characteristics

The response rate of this study was 98.5%. In this study, there were 313(90.7%) urban residents of which 73(21.15%) were adherent to prophylactic ferrous sulphate supplementation. The mean age of the respondents was 24.73 and the standard deviation was ± 4.481 . In relation to their marital status, about 345(100%) were married and 83(24.06 %) of them were found to be adherent. In terms of job/occupation distribution, 129(37.4%) were housewives of which only 29(8.4%) had adhered successfully. The majority ethnic classification of the respondents was Gamo ethnic group 258(74.8%) of which 56(16.23%) were adherent for the prophylactic ferrous sulphate supplementation. More than one third, 135(39.1%) of the respondents were educated in higher institutions and 41(11.88%) of them were found to be adherent. Among the respondents who were interviewed for their monthly income, the majority 96(27.8%) had an average monthly income of 501 to

1000 Ethiopian birr (Table 1).

Table 1: Frequency of Sociodemographic characteristics of study participants in public health facilities of Arba-minch Town, 2017(n=350)

Variable	Category	Frequency	Percent	Level of Adherence	
				Adhered N (%)	Not adhered N (%)
1.Residence	Urban	313	90.7	73(23.3)	240(76.7%)
	Rural	32	9.3	10(31.2)	22(68.8%)
2.Age		345	100		
3.Marital status	Married	345	100	83(24.06%)	262(75.94%)
4.Religion	Orthodox	164	47.5	43(26.2%)	121(73.8%)
	Protestant	174	50.4	37(21.3%)	137(78.7%)
	Muslim	7	2.0	3(42.9%)	4(57.1%)
5.Occupation	Civil servant	105	30.4	31(29.5%)	74(70.5%)
	Housewife	129	37.4	29(22.5%)	100(77.5%)
	Merchant	52	15.1	11(21.2%)	41(78.8%)
	Student	45	13	11(24.4%)	34(75.6%)
	Daily	14	4	1(7.1%)	13(92.9%)
	Labourer				
6.Ethnicity	Gamo	258	74.8	56(21.7%)	202(78.3%)
	Welayita	42	12.2	12(28.6%)	30(71.4%)
	Amhara	32	9.3	12(37.5%)	20(62.5%)
	Others*	13	3.8	3(23.1%)	10(76.9%)
7.Educational status					
No formal education		25	7.2	4(16%)	21(84%)
Primary education		72	20.9	8(11.1%)	64(88.9%)
Secondary education		113	32.8	30(26.5%)	83(73.5%)
Tertiary education		135	39.1	41(30.4%)	94(69.6%)
8.Monthly income					
0- 500 birr		88	25.5	18(20.5%)	70(79.5%)
501-1000 birr		96	27.8	28(29.2%)	68(70.8%)
1001-1500 birr		66	19.1	12(18.2%)	54(81.8%)
Greater than 1500 birr		95	27.5	25(26.3%)	70(73.7%)

3.2. Obstetric Characteristics of study participants

In this study, there were 198(57.4%) multigravida of which 41(20.7%) had adhered to the supplementation with average of 2.03 pregnancies and standard deviation of ± 1.273 . In terms of parity, the majority (45.2%) were Null Para of which 43(27.6%) were adherent to the prophylactic supplementation. In addition, all the respondents of this study had a mean delivery of 0.93times with standard deviation of ± 1.203 . Among the respondents who were interviewed for the gestational age of their current pregnancy, the majority 273(78.3%) were in their third trimester having adherence level of 29%. Among the study participants who were interviewed for the frequency of ANC visit they had, majority (89.3%) of them had less than four ANC visit of which 67(21.8%) had adhered to the supplementation. The respondents of this study had a mean of 3.08times ANC visits with standard deviation of ± 1.208 . Among the respondents who were interviewed for their source of ferrous sulphate, the majority (79.9%) got ferrous sulphate from public pharmacies of which 71(25.8%) were adherent to the supplementation. Among the respondents who were interviewed for the duration of intake of prophylactic ferrous sulphate in terms of month, 262(76.3%) of them took for less than three months during the whole course of pregnancy with average of 3.08months and standard deviation of ± 1.208 months. The

maximum and minimum intake of prophylactic ferrous sulphate in terms of month was 0.25 and 7 respectively. In addition, most of the respondents (88.4%) took iron for five to seven times per week. Among the study participants who were interviewed for the presence of problem with iron intake, about one third, 104(30.1%) of the respondents faced a problem with prophylactic ferrous sulphate intake of which 77 (73.99%) had totally discontinued the intake and 27(7.8%) Of them continued the intake despite the presence of problem. (Table 2)

Table 2: Frequency distribution of obstetric characteristics of study participants in public health facilities of Arba-Minch Town, 2017(n=350)

Variable	Category	Frequency	Percentage	Level of adherence	
				Adhered N (%)	Not adhered N (%)
1.Gravidity	Primigravida	147	42.6	42(28.6%)	105(71.4%)
	Multigravida	198	57.8	41(20.7%)	157(79.3%)
2.Parity	Null Para	156	45.2	43(27.6%)	113(72.4%)
	Multipara	189	54.8	40(21.2%)	149(78.8%)
3.Gestational Age	Trimester 2	72	20.87	3(4.3%)	66(95.7%)
	Trimester 3	273	79.13	80(29%)	196(71%)
4.Previous Anemia	Information on Yes	345	100	83(23.6%)	262(76.4%)
5.Source of information on Anemia	Health professional	281	81.5	65(22.9%)	216(77.1%)
	Media, health professional &family	64	18.5	18(6.8%)	46(93.2%)
6.Knowledge on Anemia	Anemia is deadly	43	12.2	13(30.2%)	30(69.8%)
	Anemia is aggravated by pregnancy	173	50.1	37(21.4%)	136(78.6%)
	Anemia is associated with malnutrition	99	28.7	24(24.2%)	75(75.8%)
	Anemia is aggravated by pregnancy and associated with malnutrition	30	8.6	9(29.1%)	21(70.9%)
7.Exposure for Anemia	Yes	77	22.3	15(19.5%)	62(80.5%)
	No	268	77.7	68(25.4%)	200(74.6%)
8.ANC Visits	≤Four visits	308	89.3	67(21.8%)	241(78.2%)
	>Four visits	37	10.7	16(43.2%)	21(56.8%)
9.Source Pharmacy	Public	275	79.7	71(25.8%)	204(74.2%)
	Private	70	20.3	12(17.1%)	58(82.9%)
10.Problem with iron intake	Yes	104	30.1	20(19.2%)	84(80.8%)
	No	241	69.9	63(26.1%)	178(73.9%)
11.Type of problem with iron intake	1.Infrequent intake	3	0.9	0	3(100)
	2.Discontinuation	74	73.99	12(15.6%)	62(83.8%)
12.Reasons for adherence problem	1.Fear of Side effect	73	21.2	19(26%)	54(74%)
	2.Forgetfulness	26	7.5	1(3.8%)	25(96.2%)
	3.Other/combination*	9	2.6	3(11.3%)	6(88.7%)

*More than one answer was given

3.3. Adherence level

According to this study, adherence in terms of monthly intake to prophylactic ferrous sulphate among pregnant women attending ante natal service in public health facilities of Arba-Minch town was only 24.06%. (Figure 1)

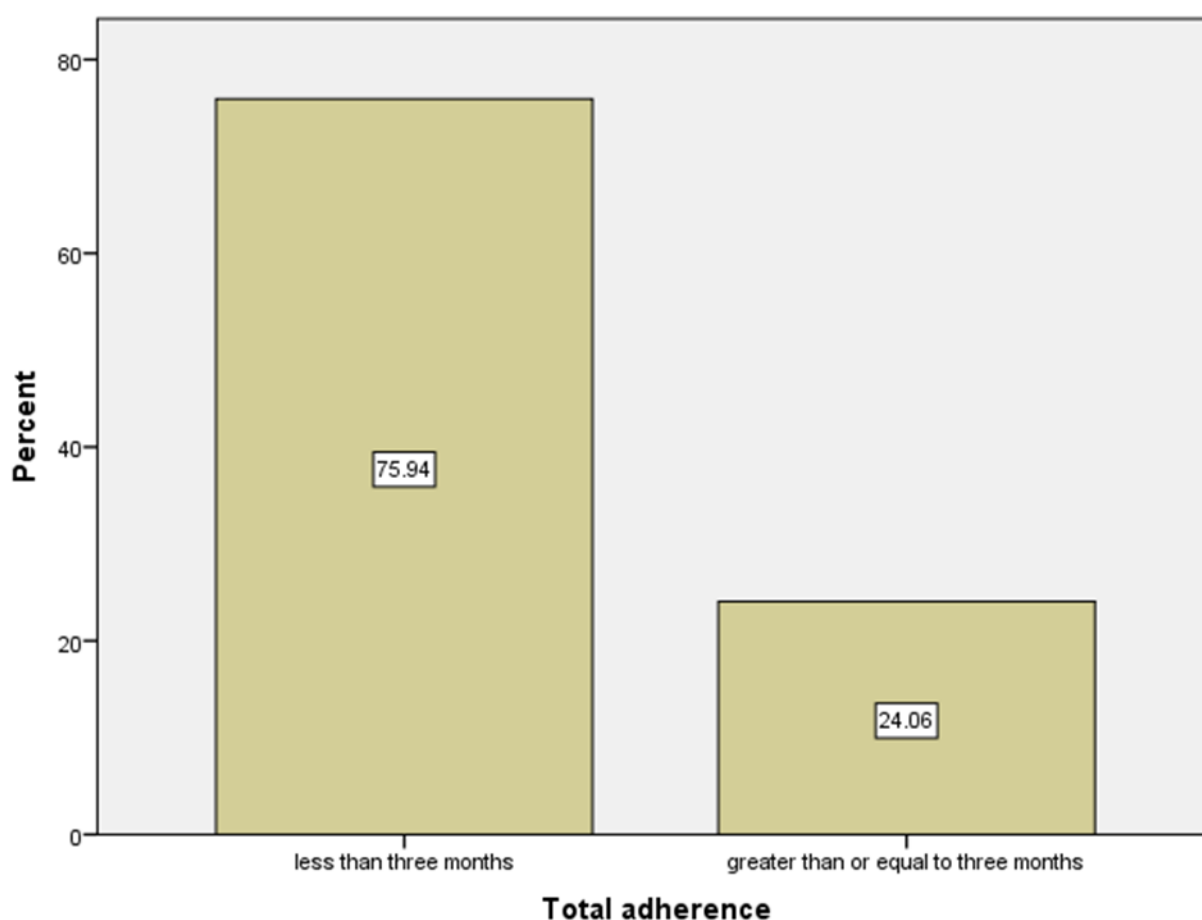


Figure 1: Total adherence of the study participants

3.4. Problems related with non-adherence

In this study, the respondents have raised varied problems as a cause for poor practice of adherence. Out of 345 pregnant women who were interviewed, 104(30.1%) have revealed that they faced a problem with the intake of prophylactic ferrous sulphate of which 74(21.4%) have totally discontinued the supplementation while only 3(0.9%) of them had very infrequent intake. The reasons behind the problems were fear of side effects 73(68.2%), forgetfulness 26(24.3%) and dosage and preparation 5(4.7%).

3.5. Factors associated with Adherence

In this study; Sociodemographic variables, Urban residence and educational status were significantly associated with adherence in the bivariate analysis. In addition, Obstetric Characteristics such as Primigravidity, Null parity, Gestational age in trimester, frequency of ante natal visits, Source of ferrous sulphate/ public pharmacy and Presence of problem with iron intake were significantly associated with adherence to the prophylactic supplementation (Table 3). In the multivariable analysis, obstetric characteristics were associated

with adherence to prophylactic ferrous sulphate supplementation (Table 3). There was significant association between adherence and gestational age (AOR=8.363 and CI=2.509-27.877). The odds of adherence was 8.363 times higher in the third trimester compared to the respondents in the second trimester. There was also significant association between adherence and the number of ante natal follow-ups (AOR= 2.321 and CI=1.087-4.955). The odds of adherence among the respondents with more than four antenatal follow -ups was 2.321 times higher compared to the respondents with less than or equal to four ante natal follow- ups.

Table 3: Bivariate and multivariate analysis of variables

Variable		Level of Adherence		COR(95% CI)	AOR(95%CI)
		Adhered N(%)	Not adhered N(%)		
1.Residence	1.Urban	73(23.3)	240(76.7%)	1	1
	2.Rural	10(31.2)	22(68.8)	0.669(0.684-4.165)	1.668(0.684-4.165)
2.Educational status	No formal education	4(16%)	21(84%)	1	1
	Primary education	8(11.1%)	64(88.9%)	0.437(0.141-1.352)	0.717(0.190-2.710)
	Secondary education	30(26.5%)	83(73.5%)	0.287(0.126-0.652)	1.887(0.557-6.394)
	Tertiary education	41(30.4%)	94(69.6%)	0.829(0.475-1.445)	2.191(0.674-7.124)
3.Gravidity	Primigravidae	42(28.6%)	105(71.4%)	1	1
	Multigravidae	41(20.7%)	157(79.3%)	1.531(0.077-2.241)	0.415(0.077-2.241)
4.Parity	Null parity	43(27.6%)	113(72.4%)	1	1
	Multiparity	40(21.2%)	149(78.8%)	1.417(0.297-8.320)	1.572(0.297-8.320)
5.Gestational age	Trimester 2	3(4.3%)	66(95.7%)	1	1
	Trimester 3	80(29%)	196(71%)	0.111(0.034-0.365)	8.363(2.509-27.877)
6.ANC visits	≤four visits	67(21.8%)	241(78.2%)	1	1
	>four visits	16(43.2%)	21(56.8%)	0.365(0.180-0.738)	2.321(1.087-4.955)
7.Source of prophylactic ferrous sulphate	Public	71(25.8%)	204(74.2%)	1	1
	Private	12(17.1%)	58(82.9%)	1.682(0.854-3.313)	0.552(0.269-1.134)
8.Problem with iron intake	Yes	20(19.2%)	84(80.8%)	1	1
	No	63(26.1%)	178(73.9%)	0.673(0.382-1.185)	1.686(0.897-3.170)

4. Discussion

Adherence to prophylactic ferrous sulphate supplementation plays a major role in the prevention and treatment of iron deficiency anemia particularly among pregnant women whose iron requirement dramatically increases because of pregnancy [33]. Thus, this study attempted to assess factors associated with adherence to prophylactic ferrous sulphate supplementation. Among the respondents who were interviewed for their iron intake in months, only 83(24.06%) of them took iron for a minimum of three months during their pregnancy time. The majority (75.94%) of the respondents had poor practice concerning the monthly intake of prophylactic ferrous sulphate. This finding is approximately similar with a study conducted in Bihar, rural India to examine individual and Facility-level determinants of Iron and Folic acid receipt and adequate consumption among Pregnant Women in 2008. As per the study, only 24% of women consumed iron folic acid for 90 or more days in which Significant interactions were found between ante natal service quality factors, ante natal services, ante natal services timing and frequency and the outcome variable adherence [9]. Similarly, a cross sectional study conducted in Kenya in 2013 revealed a significant association between adherence to prophylactic ferrous

sulphate and the frequency of ante natal visits [14]. The finding is also relatively comparable with a finding of study conducted in North Western Zone of Urban Tigray in 2015, to determine the adherence rate and identify factors associated with iron folic acid supplementation, in which the rate of adherence to iron folic acid supplementation was 37.2%. The difference in percentage may be related with the time difference between the two researches, geographical difference and a difference in service delivery system for the women receiving ante natal care in Arba minch Hospital have to pay for the prophylactic ferrous sulphate they receive [15]. In this study, gestational age in trimester and frequency of ante natal visits had a significant association with adherence. In terms of gestation in trimester, respondents in the second trimester were less adherent compared to their fellow ones in the third trimester. This finding is also revealed in a study conducted in Kenya in 2013 in which significant association was found between gestational age in trimester and adherence to prophylactic ferrous sulphate supplementation. This may be due to an increase in coping with the pregnancy and pregnancy related fatigue as well as complaints as the trimester goes far. Thus, an increased coping can have direct association with improving adherence to the prophylactic supplementation [14]. According to this study; out of 276(79%) of respondents in the third trimester, only 98(28.4%) of the respondents had their fourth ANC visit which is the minimum requirement in the third trimester of gestation. In this study, increased frequency of ante natal visits was significantly associated with adherence. This association was also revealed in study conducted in Bihar, rural India in which Significant interactions were found between adherence and ante natal service quality factors, ante natal services, ante natal services timing and frequency[9]. Similar association was investigated in a study conducted in July 2014 Maputo, Mozambique on evaluating the extent of adherence and its determinants in a pragmatic randomized controlled trial of Fe prophylaxis during pregnancy in which The level of adherence was found to be higher with having two or more ante natal visits[11]. In a similar study conducted in Kenya significant association was found between frequency of ante natal visits and adherence to prophylactic ferrous sulphate supplementation [14]. Similarly, another study conducted in North western zone of Tigray in 2015 revealed a positive association between maternal adherence to iron folic acid supplementation with having four or more ante natal visits [15]. When a pregnant woman comes for ante natal visit frequently, she will have increased access for health related informations as well as the supplementation. As the number of ANC visits increase, there is relatively better chance to diagnose pregnancy related problems including poor adherence for the supplementation of prophylactic ferrous sulphate. The pregnant women can easily and frequently discuss the problem they face with the health professional and action steps and advices towards solving the problem can be provided [12]. In this study, pregnant women raised varied reasons for the problem they faced with intake of prophylactic ferrous sulphate. Among the respondents who reported a problem with ferrous sulphate intake, 73(68.2%) of them feared the side effects. Similar finding was revealed in a study conducted in Mecha district in which 54% of the study participants discontinued the supplementation due to fear of side effects. The increase in percentage may be due to poor knowledge of study participants on Anemia in the later one [33]. On the other hand, 26(24.3%) of the study participants discontinued the supplementation because of forgetfulness. This is comparable to a finding in a case control study done in USA in which forgetfulness (29.3%) was the primary reason for missing the doses among controls. The slight difference in percentage may be related with the difference in study design, setting, service delivery and provider counseling system [35].

5. Conclusion

Based on the findings of this study, the following conclusions are made.

1. The adherence rate to prophylactic ferrous sulphate among women attending public health facilities in Arba Minch Town was only 24.06%.
2. Factors associated with adherence to prophylactic ferrous sulphate were gestational age and ante natal Visits. Respondents in the third trimester were more adherent compared to their fellow ones in the second trimester and having more than four antenatal visits was significantly associated with adherence.

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