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Awareness of Anemia and Associated Factors among Pregnant Women Attending Antenatal Care, South Ethiopia

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Abstract

Background: Anemia affects around half a billion women of reproductive age worldwide, women; especially pregnant women are at high risk of contracting anemia. The aim of this study was to asses' awareness of anemia among pregnant women and identifies associated factors with the level of awareness.

Methods: Institutional based cross-sectional study was conducted from April to June 2016 at Yrga Cheffe health center, South Ethiopia. Data were gathered using structured questionnaire. Simple random sampling technique was used to select participants. Sample frame was prepared from secondary data at antenatal care service unit. SPSS version 20 was used to analyze the data.

Results: Among 244 study participants about 94.3% (230) pregnant women were responsive and only 44.3% (102) of the women have comprehensive awareness of anemia. Awareness of anemia was significantly associated with number of ANC visit {AOR=7.407, CI=95% [3.247-16.895]}, occupational status {AOR=1.970, CI=95% [1.092-3.555]} and educational status {AOR=6.141, CI=95% [2.781-13.562]} of respondents.

Conclusion: Promoting the benefits of early and frequent ANC, enhancing the quality of ANC and counseling on the ad knowledge of women on anemia are essential elements for improving the awareness of anemia.

Keywords: Awareness; Anemia; Antenatal care; South Ethiopia; Regression analysis

Introduction

Awareness refers to "the state or level of consciousness where sense data can be confirmed by observer," or can be defined more broadly and simply as "knowledge or perception of a situation or fact [1,2]." According to the World Health Organization "anemia is a condition in which the number of RBCS or their oxygen-carrying capacity is insufficient to meet physiologic needs, which vary by age, sex, altitude, smoking, and pregnancy status [3]". It affects half a billion women of reproductive age worldwide that is 30.2% of non-pregnant and 41.8% of pregnant women aged 15-49 years [3]. The commonest type of anemia is IDA which is controlled by nutritional intake of Fe rich foods and taking IF supplementation [4], meanwhile women have less awareness about their health [5].

"Knowledge is the springboard for action [6]." It is believed that improving awareness motivates behavioral change and it is possible that limited knowledge about anemia interferes with ANC attendance, IF supplements use, dietary practices, and the use of anti-helminthes medicine [6].

That is why one of the most effective steps to reduce the prevalence of anemia during pregnancy is health promotion, which is the process of enabling people to improve their health through providing information, health education, and skill training [7]. Generally, anemia is serious public health problem with global prevalence of 48.8%, in Africa 40.7% for total population and 69% and 65.8% for global and

African pregnant women respectively [3]. As Ethiopia is one of the low-income countries with poor health status and rapid population growth with 4.1 fertility rate [8], and has one of the highest rates of maternal mortality in Africa [9].

The prevalence of anemia in Ethiopian among women of 15-49 age group is 17% [10], southeast Ethiopia is 27.9% [11] Lack of awareness is the major retarding factor to reach millennium development goal [9], as the awareness of anemia among pregnant women is only 72% [12]. Anemia was found to be severe public health problem in Ethiopia that is greater than 40% of pregnant women were anemic [3]. Although identifying gap and creating awareness is essential for controlling anemia, to the best of our knowledge, studies have not been conducted to assess the level of awareness on anemia among pregnant women in Yrga Cheffe town, Ethiopia.

Methods

Study setting and population

The study was conducted among pregnant women attending ANC service at Yrga Cheffe health center. Yrga Cheffe is located in Gedeo zone, SNNPR, approximately 395 Km south of Addis Ababa, and 125 Km away from regional capital Hawassa. About 773 pregnant women attended ANC service at the health center during study period. All pregnant women who visited the health institution for ANC follow up where included on the study, while pregnant women who were critically and mentally ill were excluded. The study was carried out from April 2016 to June 2016.

Study design and sampling method

A total of 244 pregnant women were enrolled in this study, with 5.7% non- response rate. Sample size was estimated using the general formula for single population proportion, with the following assumptions: Awareness of anemia (P) of 72% and using the 95% Confidence level and 5% marginal error. This gave us 310; since, the total population is 773, we used correction formula to find the sample size. 10% is added for non-response rate, this gives the total sample size of 244.

Simple random sampling technique was used. Sample was collected from pregnant who were attending ANC service at Yrga Cheffe health center regardless of gestational age and number of ANC visit. The sample frame for participants was prepared from patient record at ANC service of Yrga Cheffe health center.

Data collection

Data was gathered by using structured and pretested questionnaire which asked questions on anaemia and associated factors. It had five parts, these were socio demographic, life style and maternal related factors, awareness of anaemia and its adverse effects, risk and cause, sign and symptom, and prevention and treatment of anaemia were asked.

Pregnant women those who score mean (average) and above are considered as aware about anemia. Respondents who were aware of anemia and know at least one of its major causes, symptoms and consequences during pregnancy were considered to have comprehensive knowledge.

The mean awareness of the term anemia, risk, cause, prevention and treatment were 6.8 as comprehensive awareness. The questionnaire was prepared in English and translated to Amharic and highly reliable in the study (Cronbach's α=0.94).

Data management and analysis: At the end of each day the questionnaire was checked for clear, correct and complete answer of each question, and data was carefully entered into SPSS version 20 and, checked for completeness throughout the study. Pre-test was done on 5% of sample size, (12) at Hawassa University Referral Hospital, which was no included in the samples and some corrections was made prior to applying on the study. Data was coded in order to avoid missing and entered in to SPSS version 20.0 for analysis of descriptive data.

Frequency distributions, proportions both bivariate and multivariable logistic regression analysis with 95% CI was used to see the association between each independent variables and awareness of anemia.

Finally those variables which showed statistical significance at P<0.05 and 95% CI in the final model was reported as associated with awareness of anemia. The substantial difference about awareness of anemia was computed and the data is summarized in tables, charts and figure.

Results

Socio demography characteristics

The mean age of the respondents was 24.48 (± SD=4.339) years. More than half 62.6% (144) of the pregnant women was within the age range of 15-25 years followed by 47.4% range of 25 to 34 years. Many of them were married, 96.5% (222). Majority of the pregnant women were house wives 51.7% (119), urban residents 58.7% (135) and has primary education 41.3% (95).

The majorities of the participants were Gedeo 56.1% (129) in ethnicity followed by Amhara 17.8% (41) and Gurage 11.3% (26). The majority 58.7% (135) of the study participants were protestant Christian followers. Extreme poverty is highly prevalent as 44.8% (103) of pregnant have monthly income less than 750 ETB with mean of mean 1336.11 (Table 1).

Parameter		Frequency	Percentage (%)
Age group	15-25	144	62.6
	26-36	81	35.21
	34-44	5	2.1
Religion	Protestant	135	58.7
	Orthodox	83	36.1
	Muslim	9	3.9
	Other*	3	1.3
Ethnicity	Gedeo	129	56.1
	Amhara	41	17.8
	Gurage	26	11.3
	Oromo	26	11.3
	Other**	8	3.47
Education	Illiterate	62	27
	Primary	95	41.3
	Secondary	58	25.2
	College/university	15	6.5
Occupation	House wife	119	51.7
	Labor	12	5.2
	Farmer	21	9.1
	Government worker	32	13.9
	Merchant	35	15.2
	Other***	11	4.8
Marital status	Married	222	96.5
	Single	8	3.5
	≤ 750 ETB	103	44.78
Income****	751-1200 ETB	41	17.826
	≥ 1201 ETB	86	37.39

Other*: Catholic, Adventist, Other**: Wolayta, Other***: Student, Income****

Table 1: Distributions of socio demographic characteristics of study subject at Yrga-Cheffe health center, SNNP, Ethiopia, 2016.

Maternal related factors

More than three fourth, 80% (184), of respondents had followed ANC service only twice and less. About Two-thirds, 66% (152), of the participants were multi gravidas, and 51.37% (75) of respondents delivered at health institutions. Less than one fourth of 15.75% (23), 14.86% (22) respondents had still birth and abortion respectively (Table 2).

Parameter		Frequency	Percentage (%)
ANC visit	01-Feb	184	80
	03-May	32	13
	06-Oct	14	6.1
Place of delivery	Health facility	75	51.37
	Home	71	48.63
Still birth	Yes	23	15.75
	No	123	84.24
Abortion	Yes	22	14.86
	No	126	85.13

Table 2: Distributions of maternal related factors of study subject at Yrga- Cheffe health center, SNNP, Ethiopia, 2016.

Life style related factors

Source health information: More than three fourth, 76.5% (176), of respondents got health information from health professional, 12.2% (28) from TV and radio, while only 12.3% (26) from friend.

Dietary intake: Consumption of Dark green vegetable is highly consumed among pregnant 95% (218), followed by, meat 94.3% (217) and kocho (false banana), 92.6% (213) (Table 3).

Parameter	Frequency	Percentage (%)
Consumption of kocho	213	92.6
Consumption of dark green leafy vegetables	218	51.3
Consumption of fruits	134	58.3
Consumption of meat	217	94.3
Consumption of milk	74	32.2
Consumption legumes	205	89.1

Table 3: Distributions of dietary intakes of study subject at Yrga-Cheffe health center, SNNP, Ethiopia, 2016.

Awareness of anemia among the pregnant women

Regarding the awareness of Anemia, 44.3% (102) of the women were aware of the term anemia, and 55.7% (128) of them has poor comprehensive awareness of anemia; with the highest being in the age group 15-25 with a 40.97% (59).

Only 26.5% (61) of respondents were aware of some adverse outcome of anemia during pregnancy to both maternal and child

health. Only 26.5% (61) of respondents were aware of some negative consequences of anemia during pregnancy to both the mother and child (Table 4).

Character	Frequency	Percentage (%)
Awareness about anemia	102	44.3
Knowledge about outcome of anemia during pregnancy	61	26.5
Maternal death	53	23
Still birth	16	7
Infant mortality	28	12.2
Premature delivery	17	7.4
Impaired development	9	3.9
Increased BP	7	3
Other (like bleeding)	1	0.4

Table 4: Distributions of awareness of anemia and its adverse outcomes of study subject at Yrga-Cheffe health center, SNNP, Ethiopia, 2016.

Awareness of pregnant women about risk factors of anemia

The majorities of the participants were aware of sign and symptom of anemia, 67.18% (86), than cause and risk of anemia, 42.18% (54), and 39.84% (51) respectively (Figure 1).
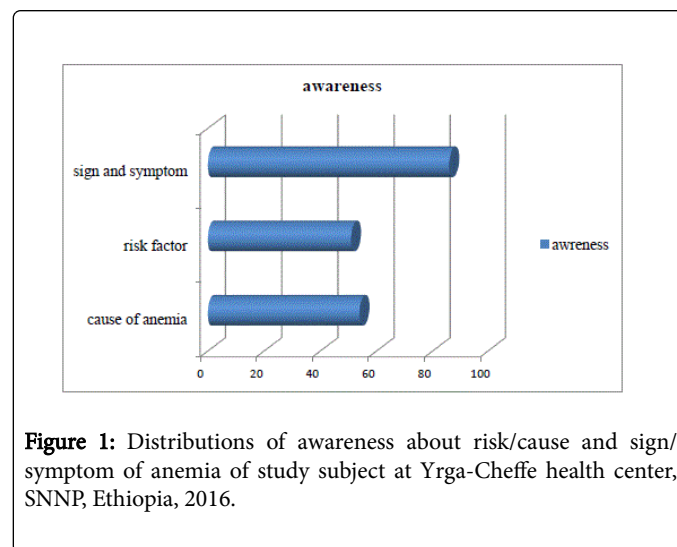

Figure 1: Distributions of awareness about risk/cause and sign/symptom of anemia of study subject at Yrga-Cheffe health center, SNNP, Ethiopia, 2016.

Awareness of pregnant women about prevention and treatment of anemia

Among all study participants, more than three fourth, 89 (87.3%), of respondents had awareness about prevention of anemia.

Similarly, more than half of the respondents had an awareness about iron/foliate tablet and its usage 68.6% (70) major sources of iron reach food 59.4% (60), importance of birth spacing towards prevention of anemia 66.6% (68), and treatments of anemia 78.2% (79) (Table 5).

Parameter		Frequency	Percentage (%)
Knowledge about the prevention of anemia	Yes	89	87.3
	No	13	12.7
Awareness about Iron/foliate tabs	Yes	70	68.6
	No	32	31.4
Knowledge about the use of Iron/foliate tabs	Drugs used to prevent infection	6	8.6
	Supplements used to prevent anemia	60	85.7
	Treatment of morning sickness	4	5.7
Awareness about Fe rich foods	Yes	60	59.4
	No	41	40.6
Awareness about major sources of Iron rich foods	Liver	44	73.3
	Red meat	16	26.7
	chicken	7	11.7
	Fruits	18	30
	Green leafy vegetables	27	45
	Honey	1	0.4
Awareness about birth spacing	Yes	68	66.6
	No	34	33.3
Inter pregnancy gap	≤ 6 months	6	8.7
	1-2 years	10	14.5
	3-4 years	35	50.7
	≤ 5 years	18	26.1
Knowledge about treatment of anemia	Yes	79	78.2
	No	129	56.1
Knowledge about method of treatments of anemia	Provision of Iron/foliate tab	71	88.8
	Blood transfusion	26	32.5
	Treating malaria	12	15
	Deworming	12	15
	Other*	4	5
Other*: Drinking juice.			

Table 5: Distributions of awareness about risk/cause and sign/symptom of anemia of study subject at Yrga-Cheffe health center, SNNP, Ethiopia, 2016.

Comprehensive awareness of pregnant women about anemia

From total of 230 study participants, only 44.3% (102) were aware of anemia (Figure 2).
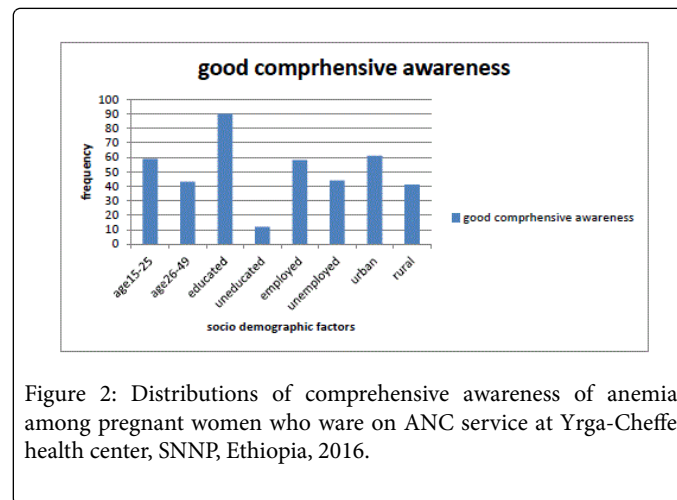

Figure 2: Distributions of comprehensive awareness of anemia among pregnant women who ware on ANC service at Yrga-Cheffe health center, SNNP, Ethiopia, 2016.

Association of dependent and independent variables

Comprehensive knowledge of anemia was measured using a mean awareness index constructed based on multiple indicators (Table 6).

Parameter		No Awareness n=128 No (%)	Awareness n=102 No (%)	COR (95% CI)	AOR (95% CI)
Educational status	Illiterate	50 (80.6%)	12 (19.3%)	4.8 [2.4-9.7]	6.14 [2.78-13.56]
	Literate	78 (46.4%)	90 (53.6%)		
Occupation	Unemployed	75 (63%)	44 (37%)	1.9 [1.1-3.16]	1.97 [1.09-3.55]
	Employed	53 (47.7%)	58 (52.2%)		
Access to health service	<15 Km	107 (52.4%)	97 (47.5%)	0.26 [0.09-0.72]	-
	≥ 15 Km	21 (80.8%)	5 (19.2%)		
Educational status of husband	Illiterate	13 (86.7%)	2 (13.3%)	5.65 [1.24-25.65]	-
	Literate	115 (53.5%)	100 (46.5%)		
Number of ANC visit	01-Feb	117 (63.9%)	66 (36.1%)	5.8 [2.8-12.15]	7.4 [3.25-16.9]
	≥ 3	11 (23.4%)	36 (76.6%)		

*Significant association (p<0.05), COR-Crudes Odds Ratio, AOR-Adjusted Odds Ratio, CI-Confidence Interval.

Table 6: Association of the overall awareness of anemia and associated factors among pregnant women on ANC follow-up at Yrga-Cheffe Health center.

Ethical Consideration

Ethical clearance and approval for the study was obtained from the ethical committee of Hawassa University, college of health science school of nursing and midwifery. Permission was also been obtained

from Head of Yirga Cheffe health center and ANC unit. Privacy, confidentiality and anonymity had been guarded. Scientific objectivity of the study was maintained with honesty and impartiality. Thus, oral and written consent was obtained from all the respondents after explaining the purpose of the study, risks and benefits to the subject, confidentiality of records, right to refuse and terminate participation on study at any time of study.

Conclusion

The awareness of anemia among pregnant women attending ANC service at Yrga Cheffe Health Center is generally low, as pregnant women have less than average awareness about anemia. Pregnant women who are uneducated, unemployed and have only one ANC visit had a low awareness of anemia. Awareness creation on the consequences of anemia during pregnancy should be given to women in child bearing age in general and pregnant women in particular.

Recommendation

Promoting the benefits of early and frequent ANC, enhancing the quality of ANC counseling and promoting the knowledge of women on anemia are essential elements for improving the awareness of anemia. Therefore, Yrga Cheffe health center and health office have to consider incorporating health extension workers and social workers in order to improve strong involvement in the dissemination of health information.

Limitation

We didn't get validated and standard data collection tool. Therefore, they data were collected by a questionnaire which was prepared by researchers. This might affect outcome of the study.

Acknowledgment

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