

Herbal medicine use and its associated factors among pregnant women attending antenatal care at Wollega University Referral Hospital, West Ethiopia.

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Abstract

Background: Herbal medications are plant-derived materials or products with therapeutic or other human health benefits, which contain either raw or processed ingredients from one or more plants. There are many different types of herbal medicine that spring from different cultures around the world. All these have the use of medicinal plants in common. Developing world general population relies on these traditional medicines for primary care. Besides, pregnant women use herbal medicines because of pregnancy related ailments and normal ailments. Therefore, the study aimed to assess prevalence and factors associated with herbal medicine use among pregnant women attending antenatal care at Wollega University Referral Hospital.

Method: A facility based cross sectional study was conducted among pregnant women attending Wollega University Referral Hospital antenatal care from May to June 2018. Written informed consent was obtained from study participants prior to data collection. Univariate and Multivariate logistic regression analysis was used to determine factors associated with herbal medicine use. Association was significant when p-value is less than 0.05.

Result: A total of 238 pregnant mothers were participated in the study. The respondents' age ranges from 17 to 46 years. The prevalence of herbal medicine use among pregnant women attending antenatal care at Wollega University Referral Hospital was 66.40%. The use of herbal medicine during pregnancy was 3.885 times more likely among rural residents (AOR =3.885, 95% CI 1.121-13.47) than urban residents. Respondents who has monthly income between 1001 to 2000 Ethiopian Birr (AOR=2.585, 95% CI 1.125–5.940) were 2.585 times more likely to use Herbal medicine as compared to those who earn >3000 Ethiopian Birr. However, mothers of planned pregnancy (AOR=0.335, 95% CI 0.114-0.986) were less likely to use Herbal medicine as compared to those who had unplanned pregnancy.

Conclusion: The prevalence of herbal medicine use among pregnant women attending antenatal care at Wollega University Referral hospital was 66.40%. Commonly used herbs were Garlic (24.37%) and ginger (18.07%). Rural residence and low income had significantly associated to herbal medicine use while planned pregnancy was inversely associated to herbal medicine use.

Background

Herbal medications are Botanical or Phytotherapy, which were plant-derived materials or products with therapeutic or other human health benefits, which contain either raw or processed ingredients from one or more plants. In some traditions, materials of inorganic or animal origin may also be present (1,2). There are many different types of herbal medicine that spring from different cultures around the world. All these have the use of medicinal plants in common, but they vary in the plants they use, the way they prepare and use medicines from these plants, and the philosophy of their treatment approaches. Different cultures may also use the same plants but differ in how it is used, or the part they use (3–5).

Herbal medicines were used in every country around the world and 70–95% of developing world general population rely on these traditional medicines for primary care (6,7). Besides, herbal medicines use among pregnant women was also common. In this population group use of herbal medicine varies from 22.3% to 82.3% in middle East, 48.6% in Gondar Ethiopia and 73.1% in Hosanna Ethiopia (3,4,8). The majority of studies reported maximum use of herbs were common during the first trimester of pregnancy probably due to the higher incidence of pregnancy related problems during this period (3,9). Pregnant women who use herbal medicine agree that herbal medicine was safe during pregnancy and efficacious over prescribed drugs for some illnesses and condition (10).

Herbal medicine has both beneficial and potential side effect. Herbs contain antioxidants, essential oils, and vitamins, which fight against germs, toxins, boost immunity level and have anti-inflammatory function (2). In addition, herbal medicine use cause abdominal pain, rash and Chronic renal failure (2,11,12).

Pregnant women use herbal medicines to treat pregnancy related ailments and normal ailments (10,13). The pregnant women, in the preparation of the medicines for their diseases and conditions, used parts of raw medicinal plants. They used leaves, roots, barks, fruits, seeds and whole plant (13). Besides, they also use aniseed, fenugreek, ginger, garlic, green tea, peppermint, eucalyptus, tenaadam, damakesse, feto and omore (8,14). These herbal medicine were mostly indicated for the management of toothache, various types of pain, flu, malaria, respiratory tract infections, digestive problems, inducing labour, skin problems, nausea, vomiting and pregnancy related conditions such as swollen feet and back pain (10,15).

Therefore, the aim of this study is to assess prevalence of herbal medicine use and its associated factors in pregnancy women.

Methods

Study area and period

The study was conducted in Wollega University Referral Hospital (WURH) antenatal care (ANC), which is located in Nekemte Town, Oromia region, West Ethiopia. The study was conducted from May to June 2018 at ANC.

Study design

A facility based cross sectional study was conducted

Study population

All pregnant women attending ANC at WURH during the study period were included in the study. However, those pregnant women who were critically ill and unable to hear and speak were excluded from study.

Sample Size Determination and Sampling Technique

The sample size was calculated using formula for a single population proportion considering the following assumptions: A 95% confidence level, margin of error (0.05) and proportion of herbal medicine use 50.4% ($p=0.504$) (16). Then substituting these values in the single population proportion formula yields 384 pregnant mothers.

$$n = \frac{Z^2 (1-p) p}{d^2} = \frac{(1.96)^2 (1-0.504) * 0.504}{(0.05)^2} = 384$$

Where: n = Sample size

p = Prevalence of herbal medicine use among pregnant women

d = Margin of sampling error tolerated

Z = the standard normal value at confidence interval of 95%

Since the total pregnant women attending ANC at WURH was less than 10,000, which was 553 pregnant women, reduction formula was applied as follow;

$$N_f = \frac{n}{(1 + (n/N))} = \frac{384}{(1 + (384 / 553))} = 226$$

Where: N_f = Final sample size

n = Calculated sample size

N = Source of population (553 pregnant women)

Therefore, the final sample size was 226 pregnant women and adding 5% for non-response rate it becomes 238. Then 238 pregnant women were recruited consequently and interviewed.

Data Collection Instrument and Procedure

Data about socio-demographic, medical history and herbal medicine use of pregnant women was collected by semi-structured interview questionnaire items. The questionnaire was prepared in English language after reviewing various related literatures. Then questionnaire was translated to Afan Oromo

language and back translated to English to ensure consistency of meaning. Before beginning of the actual data collection, the questionnaire was pretested on 5% pregnant women attending Nekemte referral hospital antenatal care clinic and a slight modification was made on questionnaire.

Data Processing and Analysis

Data was coded, entered, and analyzed by using Statistical Program for the Social Sciences (SPSS) version 21 software. Univariate and Multivariate logistic regression analysis was used to determine factors associated with herbal medicine use. Association was significant when p-value is less than 0.05.

Ethical Consideration

A formal letter was written from Wollega University, Institute of Health Sciences Ethical Review Committee. Permission was obtained from WURH in order to conduct the study. Written informed consent was obtained from study participants prior to data collection.

Results

Socio-Demographic Characteristics of Study Participants

In this study, 238 pregnant mothers were participated in the study. The respondents mean age was 31.3 ± 5.64 years that range from 17 to 46 years. Protestant religious followers account 103 (43.28%) of respondents and urban residents were 177 (74.37%) of participants. Oromo ethnic group accounts 214 (89.92%) of respondents. Majority of the respondents were married which account 233 (97.90%) of participants. Sixty one (25.63%) of participants were government employee while 146 (61.34%) of the respondents income range from 1001 to 2000 Ethiopian Birr (ETB) per month. Also, about 83 (34.87%) of participants had completed diploma/degree. A 147 (61.76%) of participants live at distance less than five kilometer from the hospital.

Table 1: Socio-demographic characteristics of Pregnant Women Attending Antenatal Care at Wollega University Referral Hospital, 2018

Variables	Number (n)	Percent (%)
Age		
21-30 years	111	46.64
31-40 years	93	39.07
≥41 years	34	14.29
Ethnicity		
Oromo	214	89.92
Amhara	18	7.56
Tigre	3	1.26
Gurage	3	1.26
Marital status		
Single	3	1.26
Married	233	97.90
Widowed	2	0.84
Religion		
Protestant	103	43.28
Orthodox	65	27.31
Muslim	48	20.17
Catholic	15	6.30
Wakefata	7	2.94
Educational status		
Illiterates	38	15.97
Primary	31	13.02
Secondary	35	14.71
College/university	51	21.43
Diploma/degree	83	34.87
Occupational status		
Government employee	61	25.63
Self-employee	77	32.35

Farmer	27	11.34
House wife	38	15.97
Student	35	14.70
Monthly income, Ethiopian Birr (ETB)		
1001-2000	146	61.34
2001-3000	65	27.32
>3000	27	11.34
Place of residence		
Urban	177	74.37
Rural	61	25.63
Distance from health facility		
<5km	147	61.76
5-10km	44	18.49
>10km	47	19.75
Number of children previously born		
No	51	21.43
One	50	21.01
Two	63	26.47
Three	48	20.12
>Four	26	10.92

Pregnancy related information and Herbal Medicine use practice

One hundred twenty one (50.84%) of respondents were at their second trimester of pregnancy stage. Most respondents, 220 (92.44%) of them were first visited ANC at their first trimester of pregnancy. One hundred thirty (54.62%) of respondents visited ANC less than four times. Two hundred seventeen (91.18%) of participants has planned pregnancy whereas 204 (85.71%) did not have history of adverse pregnancy outcome. One hundred fifty eight (66.40%) of pregnant women used herbal medicine during current pregnancy. herbal medicine commonly used were garlic 58 (24.37%) and ginger 43 (18.07%) among participants. The most common indication to use herbal medicines was nausea/vomiting 65 (27.31%) and headache 53 (22.27%). About 49 (20.59%) of pregnant mothers get herbal medicine from traditional healers/herbalist. Herbal medicine was used in among 81 (34.03%) of respondents because

“herbal medicine has fewer side effect”. In 46 (19.33%) of participants traditional healers serve as source of information about herbal medicine (**table 2**).

Table 2: Characteristics of herbal medicine use among Pregnant Women Attending Antenatal Care at Wollega University Referral Hospital, Nekemte, Ethiopia, 2018

Variables	Number	Percentage
Herbal medication use		
Yes	158	66.40
No	80	33.6
Pregnancy stage		
First Trimester	65	27.31
Second Trimester	121	50.84
Third Trimester	52	21.85
Timing of first ANC		
First Trimester	220	92.44
Second Trimester	18	7.56
Number of ANC visits		
Less than four	130	54.62
Four or more	108	45.38
Current pregnancy		
Planned	217	91.18
Unplanned	21	8.82
History of adverse pregnancy outcome		
Yes	34	14.29
No	204	85.71
Reason for herbal medicine use		
Herbal medicines are effective than convectional meds	51	21.43
Herbal medicine have fewer side effects	81	34.03
Herbal medicine are accessible without prescription	26	10.92
For what purpose and ailments you used herbal medicine		
Headache	53	22.27
Nausea/vomiting	65	27.31
Typhoid	6	2.52

Urinary tract infection	5	2.10
Common cold	22	9.24
Diarrhoea	7	2.94
What types of herbs you have used		
Ginger	43	18.07
Garlic	58	24.37
Tenadam	21	8.82
Tosign	20	8.40
Demakese	16	6.72
From where do you get these herbs		
Self-preparation	49	20.59
Traditional healers/herbalist	49	20.59
Traditional birth Attendant	13	5.46
Neighbors	18	7.56
Market place	29	12.18
Source of information about herbal medicine		
Traditional healers	46	19.33
Religious leaders	19	7.98
Family and friends	39	16.39
Neighbors	43	18.07
Health profession	11	4.62

Factors associated with Herbal Medicine Use

Univariate logistic regression shows variables like monthly income, residence have significant association with herbal medicine use. However there was no significant association between herbal medication use and age group, education status, marital status, occupation status, number of children previously born, in both the univariate and multivariate logistic regression analysis.

In multivariate logistic regression, rural residence and low monthly income have a significant association to herbal medicine use. Planned pregnancy was inversely associated to herbal medicine use in multivariate logistic regression analysis. The herbal medicine use during pregnancy was 3.885 times more likely among rural residents (AOR =3.885, 95% CI 1.121-13.47) as compared to urban residents. Similarly, Respondents who has monthly income between 1001 to 2000 ETB (AOR=2.585, 95% CI 1.125–5.940) were 2.585 times more likely to use Herbal medicine as compared to those who earn >3000 income. However, mothers of planned pregnancy (AOR=0.335, 95% CI 0.114-0.986) were less likely to use Herbal medicine as compared to those who had unplanned pregnancy (**table 3**).

Table 3: Logistic regression analysis of factors associated with herbal medicine use among Pregnant Women Attending Antenatal Care at Wollega University Referral Hospital, Ethiopia, 2018.

Variables	Herbal medicine use		Univariate analysis		Multivariable analysis	
	Yes	No	COR (95% CI)	P-Value	AOR (95% CI)	P-value
Education						
Illiterate	27	11	0.683 (0.298-1.568)	0.369	1.001(0.386-2.591)	0.999
Primary school	22	9	0.686 (0.281-1.678)	0.409	0.579 (0.200-1.672)	0.312
Secondary school	22	13	0.991(0.438-2.244)	0.983	1.139(0.428-3.037)	0.794
College/University	35	16	0.767 (0.366-1.607)	0.482	0.959(0.334-2.753)	0.938
Diploma/degree	52	31	1.0	1.0	1.0	1.0
Occupation						
Government employee	39	22	1.231(0.508-2.981)	0.645	2.092(0.594-7.370)	0.251
Self-employee	55	22	0.873 (0.366-2.079)	0.759	1.011 (0.321-3.186)	0.985
Farmer	15	12	1.745(0.616-4.948)	0.295	2.216(0.573-8.572)	0.249
House wife	25	13	1.135(0.426-3.020)	0.800	1.230(0.341-4.428)	0.752
Student	24	11	1.0	1.0	1.0	1.0
Monthly income						
1001-2000	53	93	3.159 (1.465–6.813)	0.0030.110	2.585 (1.125–5.940)	0.025
2001-3000	25	40	1.467 (0.917–2.345)	1.0	1.320 (0.791–2.204)	0.288
≥3000	15	12	1.0	1.0	1.0	1.0
Residence						
Urban	110	67	1.0	1.0	1.0	1.0
Rural	48	13	2.249 (1.135-4.457)	0.02	3.885 (1.121-13.47)	0.032
Distance from health facility						
<5km	96	51	1.739 (0.817-3.702)	0.151	0.669 (0.166-2.689)	0.571

5-10km	26	18	2.266 (0.918-5.595)	0.076	1.110 (0.284-4.342)	0.881
>10km	36	11	1.0	1.0	1.0	1.0
Pregnancy stage						
First trimester	47	18	0.862(0.387-1.920)	0.716	1.396 (0.476-4.089)	0.543
Second trimester	75	46	1.380 (0.689-2.762)	0.362	1.946 (0.842-4.597)	0.129
Third trimester	36	16	1.0	1.0	1.0	1.0
Current pregnancy status						
Planned	147	70	0.524 (0.212-1.291)	0.160	0.335 (0.114-0.986)	0.047
Unplanned	11	10	1.0	1.0	1.0	1.0
Number of ANC visit						
Less than four	93	36	0.585 (0.339-1.009)	0.054	0.502 (0.244-1.035)	0.62
≥ four	65	44	1.0	1.0	1.0	1.0
Time of 1st ANC						
First trimester	148	72	0.608(0.230-1.606)	0.316	0.369(0.110-1.242)	0.107
Second trimester	10	8	1.0	1.0	1.0	1.0
History of Adverse Drug reaction						
Yes	25	9	0.674 (0.299-1.523)	0.343	0.590 (0.240-1.455)	0.252
No	133	71	1.0	1.0	1.0	1.0

Discussion

The present study assessed herbal medicine use and its associated factors among pregnant women Attending Antenatal Care at Wollega University Referral Hospital, Nekemte, Ethiopia. The finding of this study showed 66.40% of respondents used herbal medicine during current pregnancy. This finding was in line with a studies conducted in public health facilities in Hossana Town, Southern Ethiopia (8).

However, herbal medicine use among pregnant women is higher than a study conducted in Ghana were only 52.7%, Nigeria 12%, Uganda 20% and Iran 34.4% use herbal medicine during pregnancy (9,10,13,15) . This difference can be due to inter cultural and accessibility variance of herbal medicine across countries which influence their use. Also our current finding of herbal medicine use lower than a study conducted in Mali were 79.9.% use herbal medicine (17). This variation might occurs due to disease prevalence between the study areas since malaria symptoms is common in Mali study which encourage use of medicinal plants to treat malaria.

This study showed that commonly used herbal medicines during current pregnancy was garlic 58 (24.37%), ginger 43 (18.07%), Tenadam 21 (8.82%), tosign 20 (8.40%) and Demakese 16 (6.72%) which is in line with the findings of study conducted at Hossana town public health facilities, southern Ethiopia in which garlic (68.80 %), ginger (55.80 %), tenaadam (26.4 %), damakasse (22.8 %) and eucalyptus (11.6 %) were used among respondents (8). Herbal medicines were indicated for nausea/vomiting among 65 (27.31%) and headache 53 (22.27%) management among respondents which is similar with a study conducted in Iran and Kenya where women use herbal medicine for nausea/vomiting, back pain, toothache, indigestion and infectious diseases (9,10).

Place of residence affected herbal medicine use of pregnant women. Pregnant women who live in rural area use herbal medicine more likely than urban area which is supported by a similar study conducted in Gondar, Ethiopia (4). The possible reasons for the high usage among rural residents might be due to availability of traditional medicine in rural area. Also studies supported mothers residing in the rural areas are generally more knowledgeable on Herbal Medicines when compared to mothers in the urban area (18). Also, Respondents who has monthly income between 1001 to 2000 ETB were 2.585 times more likely to use Herbal medicine as compared to those who earn >3000 ETB which is similar with the study done in Gondar Ethiopia (4). This can be due to cheap price of the herbal medicine relative to modern medicine services and low income participants favors use of traditional medicines (19,20).

Mothers of planned pregnancy were less likely to use Herbal medicine as compared to those who had unplanned pregnancy. Unplanned pregnancy was associated with a significantly increased odds of Psychological Distress compared to planned pregnancy (21). Maternal emotions like embarrassment for getting pregnant and mother's own negative affection (22) can encourage the pregnant mothers to terminate pregnancy through illegal abortion by using herbal medicines.

Limitation Of The Study

Pregnant women might be confused or embarrassed to report the use of herbal medicines during data collection. Therefore, recall bias may influence the results.

Conclusion

The prevalence of herbal medicine use among pregnant women attending ANC at WURH was found to be 66.40%. Commonly used herbs among pregnant women were ginger (*Zingiber officinale*) 43 (18.07%) and Garlic 58 (24.37%). The most common indication for use was nausea/vomiting 65 (27.31%) and headache 53 (22.27%). Rural residence and low income had significantly associated to herbal medicine use while planned pregnancy was negative associated to herbal medicine use.

Declarations

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Abbreviations and Acronyms

AOR: adjusted odds ratio; ANC: Antenatal Care; COR: crude odds ratio; SPSS: Statistical Program for the Social Sciences; WURH: Wollega University Referral Hospital

Authors' contributions

BGL conceived and designed the study; extracted, analyzed and interpreted the data; and prepared manuscript. GFM, MGD, GBW, EAG and DDJ supervised the whole research, guided the conception and design of the study, and assisted with interpretation of data and manuscript preparation. All authors read and approved the final manuscript.

Competing interests

The authors declare that they have no competing interests.

Availability of data and materials

The datasets used and/or analyzed during the current study are available from the Principal investigator on reasonable request

Consent for publication

Not applicable.

Ethical consideration

Ethical clearance was obtained from Ethical Review Committee of Wollega University, institute of Health sciences. A formal letters were written to WURH in order to get permission to conduct the study. Participation in this study was on a voluntary basis and written consent was obtained from study subjects prior to data collection.

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