Research Article

Self-Medication and its Predictors among Pregnant Women in Gedeo Zone, South Ethiopia

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ABSTRACT

Background: Self-medication is the act of using medications by individuals to treat self-diagnosed disorders or symptoms. Self-medication practice during pregnancy has been increasing and found to be high in many regions of the world, especially in developing countries including Ethiopia.

Objective: The aim of this study was to assess self-medication practice and associated factors among pregnant women in Gedeo zone, South Ethiopia, 2019.

Methods: Community based cross-sectional study design was conducted in a total of 359 pregnant women. Among the eight districts in Gedeo zone, three were selected using simple random sampling technique. Nineteen kebeles were selected using a simple random sampling technique and the sampling unit was addressed by stratified sampling from the census conducted among the pregnant women. The study participants were proportionally allocated to the selected kebeles. Data was collected by midwives and pharmacists using a pre-tested structured questionnaire. Data was entered into SPSS version 20.0 and analyzed. Descriptive statistics was computed and the association between independent and dependent variables was assessed with adjusted odds ratio and p-values<0.05 were considered statistically significant.

Results: The prevalence of self-medication practice during pregnancy is 40.4%. First trimester gestational period 2.666 (1.322-5.373), Illness during the pregnancy 2.796(1.559-5.016), Previous pregnancy self-medication history 3.516(1.918-6.447), Problem faced during the facility visit like waiting a long time, referring to outside pharmacy/clinics, poor providers approach 6.319(3.161-12.632) and antenatal care 4.520(2.249-9.082) were significantly associated with self-medication practice. The major reasons for self-medication utilization were lack of knowledge about medication danger, prior experience, to save time and easily availability.

Conclusion: The prevalence of self-medication during pregnancy was high in this study, and all women of the reproductive age group should get awareness about the risks of inappropriate self-medication and encouraged about the use of antenatal care during pregnancy.

Key words: Self-medication; Pregnant women; Gedeo zone

Abbreviations: ANC: Antenatal Care; AOR: Adjusted Odds Ratio; CBHI: Community Based Health Insurance; CI: Confidence Interval; COR: Crude Odds Ratio; ETB: Ethiopian Birr; FDA: Food and Drug Administration; HCG: Human Chorionic Gonadotropin; SPSS: Statistical Package for Social Science; WHO: World Health Organization.

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INTRODUCTION

Self-medication is the act of selecting and using of medicines by individual patients to treat self-diagnosed disease or symptoms and it is one element of self-care. It is personal attempt to solve one's own health problem without professional knowledge or without the advice of health works. In most illness episodes, self-medication is the first option which makes it a common practice worldwide [1,2].

As part of essential elements of primary health care, the World Health Organization (WHO) emphasized on the role of self-care in 1978 in its "Health for all by the year 2000" initiative justifying people will have to be supported to administer self-care, to treat common diseases and injuries, or to administer prophylactic drugs for certain endemic diseases [3].

Self-medication practice has been increasing in many parts of the world among pregnant women and a considerable proportion of pregnant women practiced self-medication during their pregnancy with modern medications or traditional herbs [4-9].

There is a significant difference in the prevalence rates of self-medication among developing and developed countries because of the differences in cultural and socioeconomic factors, differences in health care systems and health policies, accessibility and affordability to health care service, and drug dispensing policies [10].

Though self-medication is high in developing countries where drugs are not well-regulated, study revealed the majority of women in Europe, North America, South America, and Australia used at least one medication during pregnancy. There was substantial inter-region variability in the types of medication used [11]. Pregnancy results in maternal physiologic changes which may further results in alteration of drug pharmacokinetics [12].

According to the United States Food and Drug Administration risk classification of medicines during pregnancy, medicines under category 'A' show no risks in under controlled studies and those medicines in category 'B' have no evidence of human risk in controlled studies. Medicines in category 'C' may have potential risks to the fetus. Medicines under this category the risks cannot be ruled out but it used only if the potential benefits justify to the fetus. Medicines in category 'D' have positive evidence of human fetal risk, and those in category 'X' are totally contraindicated in pregnancy because they have proven fetal risks [13].

Medications use without prescribers order were common among pregnant women and potentially harmful medications (category-D and X) use appeared to be high [14].

Self-medication is a global problem that needs attention as it is a potential threat to the woman and unborn child. The possibility that women will self-medicate in developing countries will be high amid

Cite this article as: Ake SF, Yimam GN, Bekele NA. Self-Medication and Its Predictors among Pregnant Women in Gedeo Zone, South Ethiopia. 2021;12(6):60-66.

to the weak health system in the developing countries. In this part of the world, the problem is high as many drugs are contraindicated in pregnancy and women may not know which drugs are dangerous to them and their unborn child [15].

The majority of Ethiopians depend on medical plants as their only source of health care, especially in rural areas where access to villages is lacking due to the absence of vehicular roads [16].

The prevalence of self-medication practice in Ethiopia is high which varies in different populations and regions of the country. Some of the self-medication practices are harmful and need prompt action. Special attention should be given to educating the public and health care providers on the types of illnesses that can be self-diagnosed and self-treated and the types of drugs to be used for self-medication [17].

Majority of the women lacked awareness about the potential risks associated with medications use in pregnancy without prescribers order. Only 24.55% of the women believed that drug use in pregnancy could be harmful to both mother and baby and lack of awareness on the safety of drugs in pregnancy and contraceptive use advocates a need for educating and counseling women of childbearing ages [4,14].

The reasons for self-medication vary among different populations and the main symptoms leading to self-medication are headache or minor pain; fever, flu, cough, or cold; and diarrhea. Lack of health insurance, the mildness of illness, cheaper treatment, positive outcomes, previous knowledge about the drug, and emergencies of the illness, and the sources of drug information about modern drugs for self-medication were consultations by a health professional, drug experience from previous treatment, and friends. Drug retail outlets were the main sources for obtaining drugs [6,8,18,19].

Identifying the prevalence and associated factors of self-medication among pregnant women may contribute to giving health education to assure the health of mother and fetus by reducing complications attributed as a result of the use of both modern and traditional drugs during self-medication practice.

In Ethiopia regardless of the potential risks of self –medication practice, there are no sufficient studies exploring the extent and factors of self-medication during pregnancy. So, the aim of this study was to assess self-medication practice and associated factors among pregnant women in Gedeo zone, Southern Ethiopia.

MATERIALS AND METHODS

Study area and period

The study was conducted in Gedeo zone which is located in South Ethiopia and it is about 360 km far away from Addis Ababa. The zone has 2 town administrations and 6 districts. The town administrations have 12 kebeles and districts have 141 kebeles. The total kebeles in the zonal level are 153 and 1, 166,163 total population with 237,993 households. The total number of women in the reproductive age group is 271,716 among them 40,349 were pregnant. In the zone, there is one referral hospital, 3 primary hospitals, and 35 health centers. The study was conducted from January 21-March 11/2019.

Study design

Community-based cross-sectional study design was employed.

Study population

Selected individual pregnant women from selected kebeles of districts of Gedeo zone were the study population.

Sample size determination and sampling technique

Sample size was determined using single proportion formula for cross sectional study and taking the proportion of the prevalence in a previous study conducted by Jambo et al., 2018 in Harar town with the prevalence of 69.4% (0.694) [20]. By using a single population proportion formula, the sample was found to be 327. Then adding 10% nonresponses, the final sample size was 360.

Sampling procedures

Gedeo zone has eight districts and it stratified into two (2 town administration and 6 rural districts). The two districts and one town administration was selected by simple random technique. The sampling unit was addressed by using a stratified sampling technique depending on kebeles geographical location (urban and rural strata). From 124,891 total populations of the 19 selected kebeles, sample frame of 3298 pregnant women were proportionally allocated and identified by conducting census from the selected kebeles. The 360 participants were selected by systematic sampling technique interval of k (9) from the sampling frame of 3298 pregnant women (Table 1).

Table 1: Proportional allocation of pregnant women for each selected kebeles in Gedeo Zone, South Ethiopia.

S.No.	Name of kebeles	Pregnant women identified by conducting census	Sample size By PPS (0.109)	Geographic location variation
1	Haroresa	450	49	Urban
2	Buno	234	25	urban
3	Haroke	202	22	Urban
4	Balebukisa	129	14	Urban
5	Gelelicho	213	23	Rural
6	Banko Okoto	293	32	Rural
7	Dodoro	208	23	Rural
8	Buno (wenago)	142	16	Urban
9	Tutufala	142	16	Urban
10	Adado	165	18	Rural
11	Daro	96	11	Rural
12	Kochore	124	13	Rural
13	1st Okolo	88	10	Rural
14	Osolmajo	130	14	Rural
15	Chekesa Lisha	145	15	Rural

16	Layo Rasa	128	14	Rural
17	Dekuwa Hashare	97	11	Rural
18	Raphe Tora	97	11	Rural
19	Bule Town	215	23	Urban
	Total	3298	360	

Data collection tools and procedure

The quantitative data were collected using a pre-tested structured interviewer administered-questionnaire face to face interview. The urine sample for a pregnancy test was collected by trained female laboratory technicians during census conduction to confirm nonvisible pregnancy. The sample was collected by using a urine sample collection cup and confirmed by using a simple urine HCG strip.

Operational definition

Good knowledge: If study participants properly answer ≥ 75% out of all knowledge assessment questions towards the risk of self-medication.

Poor knowledge: If study participants properly answer <75% out of all knowledge assessment questions towards risk of the self-medication.

Positive attitude: If study participants properly answer ≥ 75% out of all attitude assessment questions regarding risk of self-medication.

Negative attitude: If study participants properly answer less than 50% out of all attitude assessment questions regarding risk of self-medication.

Uncertain attitude: The participants properly answer 74%-50% out of all knowledge assessment questions regarding risk of self-medication.

Unavailability service of Community Based Health Insurance (CBHI): The pregnant women or her husband were not a member of CBHI and had not been paid annual membership fees and are not getting health services in a health facility according to CBHI protocol.

Long waiting time in a health facility: The waiting of pregnant women more than 20 and 40 minutes in the health center and hospital during the ANC follow up respectively. It does not include laboratory waiting time after giving a sample for examination.

Long distance: The distance of health facility is greater than 50 minutes on foot from the individual's home.

Poor provider approach: Providing health care services for clients without greeting, listening, clear language, facial expression, respecting, and compassionating and generally care without friendly.

Data processing and analysis

The collected data were coded, entered, cleaned, and analyzed using SPSS version 20. Descriptive statistics such as percentage and frequency was conducted. Binary logistic regression analysis was conducted with 95% confidence interval to determine the association of factors and outcome variable. The logistic regression model was fit to determine the association between the different factors and the outcome. The association between independent and outcome was assessed by using adjusted odds ratio and p-values <0.05 was considered to be statistically significant.

Ethical consideration

Ethical clearance was obtained from Institutional Review Board (IRB) of Dilla University College of Medical and Health Sciences. Written consents from all respondents were obtained after detail explanation of the main purpose of the study.

RESULTS

Socio-demographic characteristics of study participants

A total of 359 pregnant women have participated in the study. The mean age of the women was 26.92 years (SD= ± 5.057). Most (77.4%) of the participants were protestant, 237(66.0%) were Gedeo in ethnicity, 46.8% had formal primary education, and the majority (99.1%) of participants were married. The median monthly household income of a household was 600.00 ETB (SD= ± 1129.092, kurtosis 1.557) (Table 2).

Table 2: Socio-demographic characteristics of self-medication practice among pregnant women in Gedeo zone, South Ethiopia.

Variables	Categories	Total (N=359) n (%)
Age	18-23	113(31.5)
	24-29	133(37.0)
	30-35	92(25.6)
	>35	21(5.9)
	Mean age	26.92(SD=5.057)
Religion	Protestant	278(77.4)
	Orthodox	51(14.2)
	Muslim	21(5.9)
	Catholic	8(2.2)
	Other a	1 (0.3)
Ethnicity	Gedeo	237(66.0)
	Oromo	49 (13.7)
	Amhara	30 (8.4)
	Gurage	8 (2.2)
	Other b	35 (9.7)
Marital status	Married	356(99.1)
	Widowed/divorced	1(0.3)
	Single	2(0.6)
Educational status of pregnant women	No formal education	118 (32.9)
	Primary	168 (46.8)
	Secondary education	51 (14.2)
	Higher education	22 (6.1)
Educational status of husband (n=356)	No formal education	66(18.4)
	Primary education	151(42.1)
	Secondary education	102(28.4)
	Higher education	40(11.1)
Occupational status of women	House wife	225 (62.7)
	Farmer	22 (6.1)
	Private	38 (10.6)
	Government employee	22 (6.1)
	Merchant	35 (9.8)
	Other c	17 (4.7)
Occupational status of husband (n=356)	Farmer	128 (35.7)
	Merchant	92 (25.6)
	Daily laborer	54 (15.0)
	Government employee	40(11.2)
	Private employee	37 (10.3)
	Other d	8(2.2)
Residence	Urban	165(46.0)
	Rural	194(54.0)

House hold monthly income in ETB	<500	161(44.9)
	501-1000	66(18.4)
	1001-1500	37(10.3)
	1501-2000	32(8.9)
	>2000	63(17.5)
Community based health insurance	Member of CBHI	23(6.4)
	Not member of CBHI	336(93.6)

Note: a: traditionalist, Adventist, wakefeta; b: Sidama, Walaita, Tigre, Gamo gofa, konso; c and d: carpenter, students, driver, broker.

Obstetric related characteristics

Out of 359 respondents, 82 (22.8%) got pregnant for the first time. 163(45.4%) gave birth for two and above children. 35.4%, 30.4%, and 34.2% of pregnant women were in the first, second and third trimester, respectively.

Twenty-six (7.2%) had the previous history of child death, and twenty-four (6.7%) had encountered spontaneous abortion (Table 3).

Table 3: Socio-demographic characteristics of self-medication practice among pregnant women in Gedeo zone, South Ethiopia.

Variables	Categories	N= 359 n (%)
Number of pregnancy	One	82 (22.8)
	Two	105 (29.3)
	Three	82 (22.8)
	Four and more	90 (25.1)
Gestation	First	127 (35.4)
	Second	109 (30.4)
	Third	123 (34.2)
Delivery number	No any	92 (25.6)
	One	104 (29.0)
	Two	76 (21.2)
	Three and more	87 (24.2)
Child death history	Yes	26 (7.2)
	No	333 (92.8)
Spontaneous abortion	Yes	24 (6.7)
	No	335 (93.3)

Medications related factors

Overall self-medication practice during pregnancy was 40.4%. Among these, 71(19.7%), 44 (12.3%) and 30 (8.4%) of the respondents practiced pharmaceutical medication, traditional and both Pharmaceutical and traditional, respectively. 205(57.1%) had previous self-medication experience (Table 4).

Table 4: Self-medication related factors of self-medication practice among pregnant women in Gedeo zone, South Ethiopia.

Variables	Categories	Total N=359 n (%)
Self-medication utilization	Yes	145(40.4)
	No	214(59.6)
Previous pregnancy self-medication practice	Yes	205 (57.1)
	No	154 (42.9)
Previous and current pregnancy self-medication	Yes	80(22.3)
	No	279(77.7)
Types of medication self-medicated(n=145)	Pharmaceutical	71(19.8)
	Herbals	44(12.3)
	Both	30(8.4)
Purpose of pharmaceutical medication (n=101)	Headache/fever/ pain	60(16.7)
	Gastritis(ant-acid)	16(4.5)
	Cough	13(3.6)
	Bacterial	5(1.4)
	Intestinal parasite	5(1.4)
	Othere	2(0.6)
Do you know name of pharmaceutical medication (n=101)	Yes	40(39.6)
	No	61(60.4)
Pharmaceutical medication used (n=40)	Paracetamol	22(6.1)
	Amoxicillin	9(2.5
	Otherf	9(2.5)
WHO/FDA category (n=40)	A	0(0)
	B	36(10)
	C	2(0.6)
	D	1(0.3)
	X	1(0.3)
Traditional medicine used, scientific & common name (n=74 of 359)	Zingiber officinale (Ginger)	8(2.2)
	Ruta chalepensis (Tenadam)	17(4.7)
	Lepidium sativum (Feto)	10(2.8
	Coffea arabica linn (Altet)	10(2.8)
	Allium sativum (Garlic)	13(3.6)
	Eucalyptus globules (Nech bahirzaf)	13(3.6)
	Ocimum lamiifolium (basilor Damakase)	3(0.8)
Purpose of traditional medicine (n=74)	Common cold	20(5.6)
	Headache	19(5.3)
	Nausea/vomiting	20(5.6)
	Heart burn	11(3.1)
	Otherg	4(1.1)
Source of information about medication (n=145)	Relative	36(10)
	Neighbor	36(10)
	Myself	22(6.1)
	Pharmacist	17(4.7)
	Husband	15(4.2)
	Other health professionals	11(3.1)
	HEWs	4(1.1)
	Radio	3(0.8)
	Otherh	1(0.3)
Source of pharmaceutical medications (n=101)	Pharmacy	55(15.3)
	Drugstore	27(7.5)
	Private clinic	12(3.3)
	Rural drug vendor	2(0.6)
	Cultural healers	1(0.3)
	Retained drugs	3 (0.8)
	Shops	1(0.3)
Source of herbals (n=74)	Market place	37(10.3)
	Traditional healers	16(4.5)
	Friends/neighbour	15(4.2)
	Self-preparation	6(1.7)
Reason for self-medication (n=145)	Lack of knowledge about medications danger	39(10.9)
	Prior experience	31(8.6)
	Save time	21(5.8)
	Save money	15(4.2)
	Medications easily available	18(5.0)
	Financial problem	9(2.5)
	Peer influence	4(1.1)
	No enough medications in the facility	4(1.1)
	Farness of health facility	4(1.1)
Pregnancy related problems experienced (n=49)	Abortion	24(6.7)
	Neonatal death	15(4.2)
	Premature birth	6(1.7)
	Fetal death	3(0.8)
	Congenital abnormality	1(0.3)
Reason for the problem above (n=49)	Unknown illness	32(8.9)
	Self-medicate unspecified medication	17(4.7)

Note: e: evil eye, herpes simplex; f: diclofenac, cotrimoxazole, ibuprofen; g: intestinal parasite, constipation, herpes simplex; h: religious leader, elder, cultural healers, traditional birth attendants.

Health service related factors

Among all participants, 252(70.2%) had ANC follow up. Among them, 145 (57.5%) and 70 (27.8%) had ANC follow up at health centers and hospitals, respectively. More than half (52.4%) of respondents travel more than 30 minutes to get health care services (Table 5).

Table 5: Health service related factors of self-medication practice among pregnant women in Gedeo zone, South Ethiopia.

Variables	Categories	Total N=359 n (%)
ANC follow up	Yes	252 (70.2)
	No	107 (29.8)
Where do you get ANC follow up (n=252)	Hospital	70 (27.8)
	Health center	145 (57.5)
	Health post	24 (9.5)
	Private clinic	13 (5.2)
Walking distance to health facility in minutes	1-30 minutes	171 (47.6)
	31-60 minutes	146 (40.7)
	61-90 minutes	24 (6.7)
	91-120 minutes	10 (2.8)
	>120 minutes	8 (2.2)
	Median	35
	Standard deviation	43.716
Problem faced during facility visit	Yes	131 (36.5)
	No	228 (63.5)
Kind of problem (N=131)	Waiting a long time	32 (21.2)
	Refer to outside the pharmacy for drugs	23(14.8)
	Providers not on time	15 (10.6)
	Provider approach is poor	27 (6.7)
	Perceived improper management	27 (5.0)
	Service fee is expensive	6(4.5)
	Not tell proper utilization of drugs	1 (0.8)

Predictors of self-medication practice during pregnancy

In multivariate logistic regression analysis, gestational period, previous medication use especially during pregnancy, No ANC follow up and health facility-related problems a pregnant women face during health facility visit were found to be significantly associated with self-medication practice during the current pregnancy (Table 6).

Table 6: Bivariate and multivariate logistic regression analysis of self-medication practice among pregnant women in Gedeo zone, South Ethiopia.

Variables	Self-medication utilization	COR(95% CI)	AOR(95% CI)	P-value	43.716
	Yes (%)	No (%)			
Residence					
Urban	61 (42.1)	106 (49.5)	1		
Rural	84 (57.9)	108 (50.5)	0.70 (0.484– 1.132)	1.016(0.478-2.158)	0.967
Monthly income in ETB					
<500	68 (46.9)	93 (43.5)	.547 (.291 - 1.027)	2.148(0.792-5.826)	0.133
501-1000	29 (20.0)	37 (17.3)	.510 (.246 - 1.061)	1.761(0.613-5.053)	0.293
1001-1500	18 (12.4)	19 (8.9)	.422 (.181 - .983)	0.598(0.201-1.786)	0.358
1501-2000	12 (8.3)	20 (9.3)	.667 (.271 - 1.641)	1.712(0.503-5.826)	0.389
>2000	18 (12.4)	45 (21.0)	1	1	
Gestation					
First	39 (26.9)	88(41.1)	2.013 (1.200- 3.377)	2.666 (1.322-5.373)	0.006
Second	48 (33.1)	61 (28.5)	1.134 (0.676-1.904)	1.907(0.920-3.954)	0.083
Third	58 (40.0)	65 (30.4)	1	1	
Delivery number					
No (null Para)	47 (32.4)	45 (21.0)	0.504 (0.276-0.920)	0.443(0.031-6.261)	0.546
One to	38 (26.2)	66 (30.8)	0.914 (0.504- 1.658)	0.684(0.076-6.194	0.736
Two	30 (20.7)	46 (21.5)	0.807(0.426 – 1.527)	0.511(0.880-2.983)	0.882
Three and above	30 (20.7)	57 (26.6)	1	1	
Previous self- medication history during pregnancy					
Yes	54(37.2)	151(70.6)	4.039 (2.583-6.315)	3.516(1.918-6.447)	0.001
No	91(62.8)	63(29.4)	1	1	
ANC follow up					
Yes	74 ((51.0)	1908.8	1		
No	71 (49.0)	24 (11.2)	1.945(1.201–3.149)	4.520(2.249-9.082)	0.002
Problem during the facility visit					
Yes	17(11.7)	113 (53.1)	8.508(4.797-15.091)	6.319(3.161-12.632	0.001
No	128(22.1)	100 (46.9)	1		
Distance from health facility in minutes					
Jan-30	60(41.4)	111(51.9)	1		
31-60	66(45.5)	80(37.4)	0.655(0.417-1.030)	0.889(0.471-1.677)	0.716
61-90	10(6.9)	14(6.5)	0.757(0.317-1.807)	1.113(0.337-3.673)	0.86
91-120	5(3.4)	5(2.3)	0.541(0.150-1.942)	1.187(0.198-7.110)	0.851
>120	4(2.8)	4(1.9)	0.541(0.131-2.239)	0.243(0.032-1.866)	0.174
43.716	43.716	43.716	43.716	43.716	43.716

In this study, the gestational period was significantly associated with self-medication practice. Pregnant women in their first trimester of pregnancy were about 2.7 (AOR=1.322-5.373 at 95% CI with p-value=0.006) times more likely to practice self-medication compared to women in their third trimester of pregnancy.

This study revealed that ANC follow up was strongly associated with self-medication practice. Pregnant women who had no ANC follow up were about 4.5 times more likely to practice self-medication compared with their counterparts (AOR=2.249-9.082 at 95% CI with p-value=0.002).

Previous medication use especially during the previous pregnancy was strongly associated with current self-medication practice in this study. Pregnant women who had previous self-medication practice were about 3.5 times more likely to practice self-medication during the current pregnancy as compared to those who did not have previous self-medication practice (AOR=1.918-6.447 at 95% CI with p-value=0.001).

Health facility-related challenges a patient face during health facility visit such as extended waiting time, unavailability of drugs, the poor approach of health care professionals, unaffordability of services were also strongly associated with self-medication the practice in current study. Pregnant women who complain about these health facility related problems were more than six times more likely to practice self-medication when compared with others (AOR=3.161-12.632 at 95% CI with p-value=0.001).

DISCUSSION

The present study revealed that the prevalence of self-medication practice among pregnant women was 40.4%.

The finding was higher than the finding from that of Yazd, Iran (35%); Ahvaz, south Iran (30.6%), Hyderabad, Pakistan (37.9%), Peru (10.2%), Netherlands (12.5%), Arak city, Iran (12%) and Mexico (21.9%) but lower than the finding in Nigeria (85%) [15, 21-27]. The prevalence is also higher than the findings in Goba (15.5%), Jimma (20.1%), Bahirdar (25.1%), Mekelle (9.5%) and Addis Ababa (26.6%) of Ethiopia [28-32].

The prevalence in our study was lower when compared to reports from web-based multinational study in Europe (Western, Northern and Eastern), North and South America and Australia (66.9%), Ibadan, Nigeria (63.8%), Democratic Republic of Congo (61.3%), Ghana (74.1%), and Tanzania (46.24%) [11,33-36]. In Ethiopia, an institution-based study conducted in Harar (69.4%) and Hosanna (73.1%, herbal) were also higher in prevalence self-medication among pregnant women when compared to our study [20,37]. The possible reasons for the difference might be due to differences in the cultural and socio-economic status of the population, study methods, sample size, health care settings, and restriction policies of dispensing medications practices and the study includes conventional and/herbal medicines.

The reasons why pregnant women practiced self-medication were lack of awareness about drug danger, prior experience, and self-medication being time-saving and easy access to medicines from traditional healers and pharmacies or private clinics without prescription. This finding was in line with the study done in Addis Ababa [32].

In this study, the most common ailments for which the pregnant women practiced self-medication were headache, common cold, and nausea/vomiting. This result was in line with studies conducted at JSUH and at selected hospitals in Nigeria where headache, fever, gastrointestinal disorders, infections, and the common cold were among common ailments for which the pregnant women practiced self-medication [15,29].

In the present study, Paracetamol and Amoxicillin were the most commonly used medications during pregnancies and a similar finding was reported from Goba of Ethiopia, DR Congo and Peru [24,28,34].

This study showed ginger (*zingiber officinale*), tenadam (*ruta chalepensis*), and garlic (*allium sativa*), feto (*Lepidium sativum*), altet (*Coffea arabica linn*), were the common herbs used during pregnancy and it is comparable with a study done at Hossana town [37].

The most commonly perceived ailments for which pregnant women took self-medication were back pain and heartburns which was in line with a study done in Pakistan that revealed pain, heartburn, and indigestion were the commonest ailments that led to self-medication [5]. This might be due to the similarity of pregnancy related ailments.

Pregnant women who had the previous history of pregnancy related self-medication were about 3.5 times more likely to practice self-medication compared to their counterparts. It was similar with a study conducted in Addis Ababa, Ethiopia, and DR Congo [32,34]. This might be due to the fact that pregnant women with previous self-medication practice had more experience to self-medicate than that didn't practice it.

In this study, pregnant women who faced problems during the health facility visit like waiting for a long time, poor provider approach, not getting providers on time and referral to outside pharmacy for medications were more than six times more likely to practice self-medication than compared to those who did not face such health facility-related problems. This study was consistent with the study done in Jimma and Addis Ababa [29,32].

Pregnant women who have no ANC follow up for pregnancies at the moment were about 4.5 times more likely to practice self-medication compared with pregnant women who had ANC follow up. This result was consistent with the study done on Goba; where having ANC follow up was found to have a protective factor [28]. The implication was that women were informed and reminded during antenatal care not to indulge in self-medication and to see health care professionals whenever they had any health concerns no matter how minor it was during ANC visits.

CONCLUSION

The prevalence of self-medication among pregnant mothers was high. Gestational period, previous medication use, health facility-related problems during the visit, and not having antenatal follow up were significantly associated with self-medication practice during the pregnancy. There was weak regulation enforcement on drugs retail outlets where drugs including antibiotics were easily available without proper prescription.

DATA AVAILABILITY

The data used to support the findings of this study are available from the corresponding author upon a request.

FUNDING

This project was funded by NORHED project at Dilla University, Dilla, Ethiopia

CONFLICTS OF INTEREST

The authors declare that there are no conflicts of interest regarding the publication of this paper.

ACKNOWLEDGMENTS

The authors are grateful to Gedeo zone health department and healthcare professionals who supported us during the data collection. Our appreciation also goes to the data collectors who showed their best effort in acquiring the appropriate data.

REFERENCES

1. The Role of the pharmacist in self-care and self-medication: Report of the 4th WHO consultative group on the Role of the Pharmacist. Bull World Health Organ.1998;26-28.
2. Self-medication, Sudan Journal of Rational Use of Medicine.
3. WHO, Global Strategy for Health for All by the Year 2000.
4. Kureshee NI, Dhande PP. Awareness of mothers and doctors about drug utilization pattern for illnesses encountered during pregnancy. J Clin Diagnostic Res. 2013;7(11):2470-2474.
5. Bohio R, Brohi ZP, Bohio F. Utilization of over the counter medication among pregnant women; A cross-sectional study conducted at Isra University Hospital, Hyderabad. J Pak Med Assoc. 2016;66(1):68-71.
6. Ebrahimi H, Atashsokhan G, Amanpour F, et al. Self-medication and its risk factors among women before and during pregnancy. Pan Afr med. 2017;27(1).
7. Rahmani A, Hamanajm SA, Fallahi A, et al. Prevalence of self-medication among pregnant Women: A systematic review and meta-analysis. Nurs Midwifery Stud. 2019;8(4):169-175.
8. Nkrumah J, Gbagbo FY. Self-Medication among pregnant women in effutu and agona west municipalities of the central region of Ghana. Int J Public Health. 2019;1(4):25.
9. Abeje G, Admasie C, Wasie B. Factors associated with self-medication practice among pregnant mothers attending antenatal care at governmental health centers in Bahir Dar city administration, Northwest Ethiopia, a cross sectional study. Pan Afr med. 2015.
10. Branthwaite AJ, Pechère JC. Pan-European survey of patients attitudes to antibiotics and antibiotic use. Int J Med Res. 1996;24(3):229-238.
11. Lupattelli A, Spigset O, Twigg MJ, et al. Medication use in pregnancy: A cross-sectional, multinational web-based study. BMJ open. 2014;4(2):e004365.
12. Frederiksen MC. Physiologic changes in pregnancy and their effect on drug disposition. Seminars in perinatology 2001;25(3):120-123
13. FDA Pregnancy Categories. U.S. Department of health and Human Services, CHEMM.2008.
14. Mohammed MA, Ahmed JH, Bushra AW, et al. Medications use among pregnant women in Ethiopia: A cross sectional study. J Appl Pharm Sci. 2013;3(4):116.
15. Emmanuel A, Achema G, Afoi BB, et al. Self-medication practice among pregnant women attending antenatal clinic in selected hospitals in Jos, Nigeria. IJNHS.2015.
16. Lambert J. Ethiopia: Traditional medicine and the bridge to better health. IK Notes. 2001.
17. Ayalew MB. Self-medication practice in Ethiopia: A systematic review. Patient preference and adherence. 2017;11:401.
18. Almasdy D, Sharrif A. Self-medication practice with non-prescription medication among university students: A review of the literature. Arch Pharm Pract. 2011;2(3):95.
19. Shafie M, Eyasu M, Muzeyin K, et al. Prevalence and determinants of self-medication practice among selected households in Addis Ababa community. PloS one. 2018;13(3):e0194122.
20. Jambo A, Mengistu G, Sisay M, et al. Self-medication and contributing factors among pregnant women attending antenatal care at public hospitals of Harar town, Ethiopia. Front Pharmacol. 2018;9:1063.
21. Baghianimoghadam MH, Mojahed S, Baghianimoghadam M, et al. Attitude and practice of pregnant women regarding self-medication in Yazd, Iran. Arch Iran Med. 2013;16(10).
22. Afshary P, Mohammadi S, Najar S, et al. Prevalence and causes of self-medication in pregnant women referring to health centers in southern of Iran. Int J Pharm Sci Res. 2015;6(2):612-619
23. Bohio R, Brohi ZP, Bohio F. Utilization of over the counter medication among pregnant women; a cross-sectional study conducted at Isra University Hospital, Hyderabad. J Pak Med Assoc. 2016;66(1):68-71.
24. Miní E, Varas R, Vicuña Y et al. Self-medication behavior among pregnant women user of the Instituto Nacional Materno Perinatal, Peru. Rev Peru Med Exp Salud Publica. 2012;29(2):212–217.
25. Verstappen GM, Smolders EJ, Munster JM, et al. Prevalence and predictors of over-the-counter medication use among pregnant women: A cross-sectional study in the Netherlands. BMC public health. 2013;13(1):1-9.
26. Shamsi M, Bayati A. A survey of the prevalence of self-medication and the factors affecting it in pregnant mothers referring to health centers in Arak city. SID. 2009;7(3):34–42.
27. Alonso-Castro AJ, Ruiz-Padilla AJ, Ruiz-Noa Y, et al. Self-medication practice in pregnant women from central Mexico. Saudi Pharm J. 2018;26(6):886-890.
28. Zewdie T, Azale T, Shimeka A, et al. Self-medication during pregnancy and associated factors among pregnant women in Goba town, southeast Ethiopia: A community based cross sectional study. BMC Res Notes. 2018;11(1):1-6.
29. Befekadu A, Dhekama NH, Mohammed MA. Self-medication and contributing factors among pregnant women attending antenatal care in Ethiopia: The case of Jimma University specialized hospital. J Med Sci. 2014;3(1):969-981.
30. Abeje G, Admasie C, Wasie B. Factors associated with self-medication practice among pregnant mothers attending antenatal care at governmental health centers in Bahir Dar city administration, Northwest Ethiopia, a cross sectional study. Pan Afr med. 2015.
31. Gebremedhin GL, Gomathi P. Assessment of drug use and effect in pregnant women attending antenatal care in hospitals of Mekelle, Tigray, Ethiopia. J drug deliv ther. 2014;4(6):75-82.
32. Beza SW. Self-medication practice and associated factors among pregnant women in Addis Ababa, Ethiopia. Trop Med Int Health. 2018;46(1):1-4.
33. Yusuff KB, Omarusehe LD. Determinants of self-medication practices among pregnant women in Ibadan, Nigeria. Int J Clin Pharm. 2011;33(5):868-875.
34. Mbarambara PM, Songa PB, Wansubi LM, et al. Self-medication practice among pregnant women attending antenatal care at health centers in Bukavu, Eastern DR Congo. IJIAS. 2016;16(1):38.
35. Adama S. Self-medication perception and practice among pregnant women in Wa Municipality Doctoral dissertation, University of Ghana.2017.
36. Marwa KJ, Njalika A, Ruganuza D, et al. Self-medication among pregnant women attending antenatal clinic at Makongoro health centre in Mwanza, Tanzania: A challenge to health systems. BMC Pregnancy Childbirth. 2018;18(1):1-8.
37. Laelago T, Yohannes T, Lemango F. Prevalence of herbal medicine use and associated factors among pregnant women attending antenatal care at public health facilities in Hossana Town, Southern Ethiopia: Facility based cross sectional study. Arch Public Health. 2016; 74(1):1-8.