Research Article

Assessment of Self-Medication Practice and Associated Factors Among Pregnant Women Attending Antenatal Care Clinic at Dessie Comprehensive Specialized Hospital, Northeast Ethiopia

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Abstract

Background: People use self-medication for minor illnesses, have prior experience with the drug, and have easy access to the drugs without a prescription in their area. Self-medication during pregnancy is considered a major challenge concerning benefits and potential undesirable effects on the mother and the fetus which might contribute to maternal and fetal morbidity and mortality. Therefore, this study assessed self-medication practice and associated factors among pregnant women at Dessie Comprehensive Specialized Hospital (DCSH).

Methods: An institutional-based cross-sectional study was conducted using a semi-structured questionnaire among pregnant women who were attending antenatal care clinics at Dessie Comprehensive Specialized Hospital from March 2023 – May 2023. A simple random sampling technique was employed to select the study participants. Descriptive and inferential statistics were computed using Statistical Package for Social Sciences version 23.

Results: Among 275 respondents, the prevalence of self-medication during current pregnancy was 66.56%. Among those, 40.3% and 26.3% used herbal medicines and conventional medicine for self-medication, respectively. The most common reason for conventional medicine use was previous medication experiences 39(54.16%). The primary reason for the herbal drug was the easy accessibility of the herbs without prescription which accounted for 40 (36%). There is evidence of an association between age (x^2 = 6.196; p-value = 0.045), monthly income (x^2 = 6.992; p-value = 0.030), and marital status (x^2 = 8.210; p-value = 0.042). Conventional medication use was shown to be associated with occupation (x^2 = 13.692; p-value = 0.018) and Self-medication out of pregnancy (x^2 = 24.463; p-value = 0.001). There is strong evidence of an association between monthly income (x^2 = 9.280; p-value = 0.010) with herbal medicine practice.

Conclusions: The current study showed that the prevalence of self-medication practice by pregnant women was high. Particularly, most self-medication-practicing pregnant women used herbal medicines. Self-medication practice was significantly associated with age, marital status, monthly income, and self-medication practice out of pregnancy. Conventional medicine use was significantly associated with occupation and self-medication use out of pregnancy while herbal medicine use was shown to be associated with monthly income.

Keywords: Self-Medication Practice, Conventional Medicine, Herbal Medicine, Pregnant Women.

1. Introduction

Self-medication can be defined as the use of medication (s) by a patient in his interest or on the advice of pharmacists or without a prescription [1]. Globally, self-medication is a public concern that has been observed to show an increment these days. Nearly 80% of people throughout the world depend on the use of alternative medicines as the first basis of their health care. Self-medication as a principal practice of healthcare is very common among the population in developing countries such as Africa and Asia [2]. In sub-Saharan Africa, the practice of self-medication is high because of the extent of poverty and limited health care systems and facilities. Self-medication as a health-seeking behavior has been considered a potential threat to the health of people in practice [3].

Self-medication has a positive impact on individuals and healthcare systems when practiced properly. It needs health care and professional advice and access to appropriate information. There may be an increased risk of self-medication during pregnancy in most developing countries in which the health system is inefficient and people access medicines easily from retail outlets [4].

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Self-medication is a global problem and has been practiced by different age groups and populations. Pregnant women are not exceptions; they practice self-medication to manage pregnancy-associated symptoms or diseases. Special focus is given during drug therapy to pregnant mothers to avoid potential harm to the mother and the unborn baby; thus, self-medication during pregnancy could cause or contribute to fetus and health care in the mother [5].

During pregnancy, the pharmacokinetics profile of the drug may be altered because of maternal physiologic change. It may pass through the placenta and cause harm to the fetus. Self-medication may cause serious structural and functional adverse effects on the fetus including fetal toxicity, malformations, teratogen effects, and other potential harms. Furthermore, it may cause low birth weight, premature birth, feeding problems; and respiratory problems in the fetus and affect the health of the mother [6].

For many commonly used medicines, evidence of safe use in pregnant women has not been established. This is because medication safety information for pregnant women is limited because pregnant women are often excluded from clinical trials of medicines [7]. The limited medicine information has considerable contribution to maternal and neonatal mortality and morbidity, and fetal death [2]. Despite this, studies showed that there is a high level of self-medication use among pregnant women. In developing countries, pregnant women use both herbal and conventional medicines in their self-care. Some herbal medicines are potent, and their safety is not as evident as people think [8].

Self-medication practice was reported to be high in different countries of the world. However, there are scarce data in developing countries. The result of this study may provide important information on the prevalence and factors associated with the self-medication practice of pregnant women in the study area. This may help to give attention to the problem and identify areas of focus to curb the problem by both healthcare providers and policymakers.

2. Methods
Study Area and Period: This study was conducted at Dessie Comprehensive Specialized Hospital (DCSH) from March 2023 – May 2023, Northeast Ethiopia. It provides special health services to the town and surrounding population. The hospital has multiple specialized clinics medical, pediatrics, surgical, and gynecological ward including an ANC (Antenatal care) follow-up clinic. At ANC clinic gynecologists, residents, interns, and midwife nurses are responsible for the follow-up of pregnant mothers.

Study Design
An institutional-based cross-sectional study was conducted on 275 pregnant women attending ANC at DCSH.

Population
All pregnant mothers who were attending the ANC clinic at DCSH were the source population while all pregnant women who were attending antenatal care at DCSH during the study period and who fulfilled the inclusion criteria were the study population. Those pregnant women unwilling to participate in the study who were mentally ill and had hearing or visual impairment were excluded from the study.

Sampling Technique and Sample Size Determination
The sample size was determined by using a single population proportion formula using 76.7 % prevalence, 95 % confidence interval, and 5 % marginal error [9]. The source population was below 10,000 and sample was adjusted to 275. A simple random sampling technique was employed to select the study participants.

Study Variables
The dependent variable was Self-medication practice of herbal drugs and conventional medicine use during pregnancy and the independent variables were Socio-demographic and Obstetrics-related variables.

2.1. Data Collection Tools and Quality Assurance
Before data collection was initiated, a questionnaire was prepared. Then the data was collected by using a semi-structured interviewer administrative questionnaire. The questionnaire was prepared in English language including all relevant variables based on the objectives of the study and then translated to Amharic language. The data was collected by the data collector as soon as the questionnaire was prepared; a pretest was prepared and performed in 5% of the population at Dessie Health Center. After collecting the pilot data, the responses of the respondents were entered in a spreadsheet and the data were cleaned using principal component analysis. The collected data during the pretest was not included in the analysis and data was not recollected on those individuals who participated during the pretest. Data collection was supervised during data collection. The data collectors discussed the content of the interview questionnaire and clarified when there was any ambiguity before the start of data collection. Then, the data was cleaned for possible errors. When there was an error, data was corrected by crosschecking with the data on the questionnaire papers using the original ID variable on the SPSS immediately. Data were checked for completeness, accuracy, and consistency immediately after the collection and appropriately arranged.

2.2. Data Processing and Analysis Techniques
The collected data was checked for completeness and consistency and then entered into SPSS® (IBM Corporation) version 23 for analysis. Descriptive statistic was used to describe the result of the study in frequency and percent. The association between dependent and independent variables was determined. Statistical significance was considered when p-value was less than 0.05. The prevalence of conventional and herbal medicines was analyzed independently. Independent variable was tested for association with self-medication (conventional + herbal medication). Independent variables were also tested for an association with conventional and herbal medicine individually.

Definition of Terms

Self-Medication: can be defined as the use of medication (s) by a patient in his/her interest or on the advice of pharmacists or without a prescription. It includes both conventional and herbal medicine [1].

Conventional Medicine (CM): is a medicine practiced by holders of M.D. (medical doctor) or D.O. (doctor of osteopathy) degrees and by their allied health professionals, such as physical therapists, psychologists, and registered nurses [3].

Herbal Medicine (HM)

is a plant or plant part used for its scent, flavor, or therapeutic properties [8].

3. Results

Socio-Demographic Information of the Respondents: A total of 275 pregnant women participated in this study with a response rate of 100%. Of the entire participants, 101 (36.7%) women were in the age group of 25–29 years. Most of them (N = 265, 96.4%) were married. 96 (34.2%) pregnant women had Secondary school. For most pregnant women, the place of residence was urban (N = 232, 84.4%) with a distance from health facilities less than 5 km (N = 115, 41.8%) (Table 1).

Table 1: Socio-Demographic Information of the Respondents at DCSH, April 2023.

Characteristics	Age	Frequency	percent
Age group in year	18-24	55	20
	25-29	101	36.7
	30-34	82	29.8
	>35	37	13.5
Marital status	Married	265	96.4
	Divorced	4	1.5
	Widowed	6	2.2
Occupation	-Governmental employed	57	20.7
	-self-employee	43	15.6
	- Housewife	130	47.2
	- Farmer	20	7.3
	-Student	25	9.1
Monthly income in ETB	<3000	145	52.7
	3000-6000	82	29.8
	>6000	48	17.5
Education level	Illiterate	30	10.9
	Primary school (1-8)	43	15.6
	Secondary school (9-12)	96	34.9
	College/University student	45	16.4
	Diploma/Degree	61	22.2
Place of Residence	Urban	232	84.4
	Rural	43	15.6
Distance from health facility	<5 km	115	41.8
	5-10 km	86	31.3
	>10 km	74	26.9

Obstetrics Information of the Respondents

One hundred twenty-one (44.0%) pregnant women were gravida-III and most of the respondents 105(38.2%) had two children with parity-two. And 13 (4.7%) pregnant women had a history of abortion. The major reason for their abortion was health problems 7(53.8%). During the study period, most of the respondents 214 (77.8%) were in the second trimester (Table 2).

Table 2: Obstetrics Information of the Respondents at DCSH, April 2023

Characteristics		Frequency	percent
Number of gravidae	One	95	34.5
	Two	37	13.5
	Three	121	44.0
	> Four	22	44.0
Number of parity	No child	50	18.2
	One child	93	33.8
	Two child	105	38.2
	More than two child	27	9.8
Previous abortion (n=13)	Yes	13	4.7
	No	262	95.3
Reason for abortion	Health problem	7	53.85
	Low economic level	1	7.69
	Unwanted pregnancy	5	38.46
Stage of pregnancy	First trimester	23	8.4
	Second trimester	214	77.8
	Third trimester	38	13.8

Self-Medication Practice

Among 275 respondents, 183 (66.55%) pregnant women used self-medication during their current pregnancy. It includes both conventional and herbal medicine during pregnancy (Table 4).

Conventional Medication Practice

Among 275 pregnant women, 72 (26.18%) pregnant women used conventional medicine (CM) during their current pregnancy. 39(54.16%) had Previous medication and 16 (22.2%) mothers used CM due to easy availability of the drug, particularly for the ailment of headache and common cold which accounted 35(48.6%) and 22 (30.5%) respectively. Commonly used drug was paracetamol about 33(45.8%) and amoxicillin about 16 (22.2). Most of the source of information about the drugs was obtained from their Pharmacy/druggist which accounted 34(47.2%) and their neighbor about 18 (25.0%). In addition, the commonly used drugs in private pharmacies/drug sellers about 51(70.83%) and friends about 16(22.2%). Most of them 33 (43.8%) users had no information about the drugs they used and 20(27.8) knew the dose of the drug (Table 3).

Table 3: Self-medication practice, conventional medicine practice, reasons for use, source of modern medication, and recommendation for self-medication of the pregnant women at DCSH, April 2023.

Characteristics		Frequency	percent
Self-medication during current pregnancy	Yes	183	66.55
	No	92	33.45
Conventional medicine During the current pregnancy	Yes	72	26.18
	No	203	73.81
Reasons for CM (n=72)	Time saving	6	8.33
	Easley available	16	22.22
	Previous medication experiences	39	54.16
	Disease not serious	5	6.94
	Long waiting time for health service	2	2.8
	High cost of visiting health professionals	3	4.16
	Poor ethics of health professionals	1	1.38
Ailments for CM	Headache	35	48.6
	Common cold	22	30.5
	Cough	11	15.3
	Diarrhea	4	5.6

Drugs for CM	Paracetamol	33	45.8
	Amoxicillin	16	22.2
	Metronidazole	3	4.2
	Diclofenac	9	12.5
	MTS	5	6.9
	I don't remember	6	8.3
source of information about the drugs	Pharmacy/druggist	34	47.2
	Internet	9	12.5
	Your self	11	15.3
	Your neighbor	18	25.0
where did you get the drugs	Neighbors	5	6.94
	Private pharmacy/ drug sellers	51	70.83
	Friend	16	22.2
What did you know about the drugs	Dose	20	27.8
	Side effect	5	6.9
	How to take	14	19.4
	No information	33	45.8

Herbal Medicine Self-Medication Practice

In Table 5, the study showed that 111 (40.4 %) pregnant women used HM among 275 selected pregnant women. The major reason for HM practice was the easy accessibility of herbal medicine without prescription about 40 (36.0%) and HM have fewer side effects about 35(31.5). Most of the users used HM for headaches about 43 (38.7%) and for common cold about 30(27.0). About 50 (45.0%), the common HM which is used for this ailment was Ginger about 55 (49.54). The users mainly got source of information about HM from neighbors about 47 (42.3%) and family and friends about 32(28.8). 63(456.75%) mothers prepare this HM by themselves and traditional birth attendants about 29(26.1). (Table 4).

Table 4: Herbal Medicine Use, reasons for use, source of herbal medication, and recommendation for herbal medication of the pregnant women at DCSH, April 2023

Characteristics		N	%
Herbal medicine during the current pregnancy	Yes	111	40.4
	No	164	59.6
Reason for herbal medication use (n=111)	-Herbal medicines are effective than conventional medicines	21	18.9
	-Herbal medicines have fewer side effects	35	31.5
	-Herbal medicines have lower cost	15	13.5
	-Herbal medicines are accessible without prescription	40	36.0
Ailments	Headache	43	38.7
	Common cold	30	27.0
	To facilitate labor	23	13.5
Types of herb(s)	Ginger	55	49.54
	Garlic	14	12.6
	Osmiumlamifolium (damakese)	17	15.3
	Rutachalepeniss (tenaadam)	20	18.01
	Linumusitatissimum (telba)	5	4.5
Source of information about herbal medicine	Traditional healers	21	18.92
	Religious leaders	11	9.91
	Family and friends	32	28.8
	Neighbors	47	42.3

Where did you get the herbal medicine?	Self-preparation	63	56.75
	Traditional healers/Herbalist	4	3.60
	Traditional birth attendants	29	26.1
	Neighbors	15	13.5

Factors Associated with Herbal Medicine Practice

There is strong evidence of an association between monthly income (X^2 = 9.280; p-value = 0.010) with herbal medicine practice. However, the other variables didn't show a significant association with herbal medication practice. (Table 6).

Table 6: Cross tabulation associated factors for Herbal medication practice at DCSH, April 2023.

Characteristics		Herbal medicine use			p-value
		Yes	No	total	
Marital status	Divorced	2	2	4	.51
	Married	107	158	265	
	widowed	2	4	6	
Occupation	Gov'tal employed	13	44	57	.229
	self-employee	21	22	43	
	Housewife	68	62	130	
	Farmer	7	13	20	
	Student	2	23	25	
Education level:	Illiterate	23	0	23	.610
	Primary school (1-8)	20	37	57	
	Secondary school (9-12)	39	112	151	
	College student	7	0	7	
	Diploma/Degree	22	15	37	
Place of residence	Urban	95	137	232	.986
	Rural	16	27	43	
Distance from: health facility	<5km5-	21	94	115	.311
	10 km	43	43	86	
	>10 km	47	27	74	
Age group in year	18-24	12	43	55	.095
	25-29	54	47	101	
	30-34	27	55	82	
	>35	18	19	37	
monthly income:	<3000	73	72	145	.010
	3000-6000	38	44	82	
	>6000	0	48	48	
SMOP	Yes	67	156	223	.745
	No	44	8	52	

4. Discussion

This study assessed the prevalence and associated factors of self-medication among pregnant women who were attending the ANC clinic of DCSH. In addition, we are also convinced to report the prevalence, reasons, ailments, type of medicine, source of information, source of the medicine, and associated factors for both CM and HM separately.

The prevalence of self-medication during the current pregnancy was high, 66.54%. This is a composite of both CM and HM use. This finding is higher than the studies done in Addis Ababa, Ethiopia (26.6%), Iran (35%), Mexico (21.9%), and Bukavu in Eastern DR Congo (61.3%) [10-14] On the contrary, it is lower than the study done in Harar town, Ethiopia (69%); Nigeria (85%); and Central Region of Ghana (69%) [5, 14, 15]. When we look into its subparts, CM and HM, the prevalence of CM practice was 26.18%. It is consistent with the study done in kemisse (26.9%) [9]. It is higher than the study done in Mexico (6.11%) and Addis Ababa, Ethiopia (18.2%) and Gondar, Ethiopia (12.5%). conversely, it is low-

er than the studies done in Harar town, Ethiopia (29.1%) [4, 10].

The prevalence of HM practice was 40.4% which is consistent with the study done in Gondar Ethiopia (38.0%). Conversely, is higher than the study done in Addis Ababa, Ethiopia (10.9%); Mexico (14.68%), Gulu district in Northern Uganda (20%); and Mwanza in Tanzania (25.3%) [10, 12, 16]. On the opposite, it is lower than the study done in Gondar, Ethiopia (48.6%), kemisse, Ethiopia (49.8%), and Harar town, Ethiopia (58.2%) [4, 9, 17]. The difference may be due to the diversity in the socio-economic factors, geographic location, accessibility, and study settings. The high prevalence of self-medication by pregnant women may be due to multiple reasons. From there, the lack of knowledge of pregnant women on the potential risks of self-medication during pregnancy could be among the major ones. Like most sub-Saharan African countries, because of the high workload on the health care workers and patient flow in the study setting, health care providers may not give adequate health education on the possible risks of self-medication on the pregnant women's health and their fetus adequately.

The commonest reasons given for CM and HM use were having prior experience with the drug (54.16%) and easy accessibility (22.22%), respectively. This is supported by the study done in Harar town, Ethiopia; Addis Ababa, Ethiopia; Gondar, Ethiopia; Bukavu, Eastern DR Congo; and Jos, Nigeria [4, 7, 10, 13]. Additionally, knowing about the disease and treatment was the reason for self-medication by CM. Likewise, the less frequent reasons for HM use were better effectiveness, lower cost, and fewer side effects than CM (Harar town, Ethiopia) [4]. The other commonly mentioned reasons for self-medication in previous studies were time-saving, the disease was not serious (61) (54.5) lack of trust in drugs prescribed by health workers, cheaper treatment cost, positive outcomes, expensive drug prescription in the health facility [10, 15].

Paracetamol (45.8%) and ginger (49.54%) were the most commonly used conventional and herbal medicines, respectively. This is consistent with many previous studies [5, 10, 13, 9, 12]. Headache (48.6%) and common cold (30.5%) were the most commonly mentioned ailments for the use of CM and HM, respectively. In addition, self-medication was practiced for treating typhoid, and cough. It is in line with many of the previous studies [11, 14]. Because of physiologic disturbance during pregnancy, pregnant women may be prone to many illnesses; however, pregnant women should consult their doctors before taking any medication to minimize the potential risks of self-medication. Pharmacists/druggists (47.2%) for CM use and neighbors (42.3) followed by family and friends (28.8) for HM were the commonest source of information about self-medication. This is consistent with studies done in Harar town, Ethiopia; Gondar, Ethiopia; Mexico; and Addis Ababa, Ethiopia) [4, 10, 12, 17]. So, empowering pharmacists/druggists, and consideration of families, close relatives, and friends in the health education of pregnant women may prevent potential risks and maximize possible benefits of Self-medication.

The CM used were mostly obtained from a community pharmacy or drug store (70.83%). However, the HMs were mainly self-prepared (56.7%). It is less than the previous studies done in Harar town, Ethiopia, and Addis Ababa, Ethiopia. However, HMs were purchased from the supermarket in the study done in Mexico [4, 10, 12]. This may be due to the presence of a tradition of herbal remedy preparation at home in Ethiopia.

In this study, self-medication was significantly associated with a previous history of self-medication and monthly income. In the study done in Mexico, it was significantly associated with smoking followed by alcohol consumption and higher education [12]. The discrepancy in the predictors of self-medication in different studies may be due to differences in study setting. So, it is a good reflection that studies are very essential to identify the driving factors and better understanding in the nature of self-medication in different settings. In addition, since some of the previous studies only consider either CM or HM as self-medication, it may be appropriate to identify factors for each of them independently.

In this study, CM use was significantly associated with a previous history of self-medication. This may be due to the sense of perceived experience to the CM. Thus, pregnant women may believe that using drugs that were used out of pregnancy may not harm their pregnancy. The remaining medications that had been obtained before the current pregnancy at home may be used for the same symptoms or illnesses that they had before becoming pregnant. However, it could be a harmful practice because previously used medicines may not be safe for pregnant mothers. Similarly, the use of HM is significantly associated with a previous history of self-medication and monthly income. Likewise, HM was highly practiced by pregnant women with relatively higher monthly income (greater than 6000 Ethiopian birr). This may be due to the affordability issue of locally available HM. However, lower monthly incomes (less than 3000 Ethiopian birr) tended to be associated with CM. It seems obvious that pregnant women with lower monthly income tend to practice self-medication by CM, because they may not be able to afford the necessary healthcare cost to visit the nearby healthcare facility.

Considering the high prevalence of self-medication and variability in the magnitude, reasons, types of illness, and medicines used for self-medication, all concerned bodies should pay due attention to the self-medication of pregnant women. Healthcare providers may contribute a lot through education, provision of adequate information, and counseling of pregnant women about self-medication depending on case-by-case circumstances.

5. Conclusion

The reported prevalence of self-medication among pregnant women is considerably high. Pregnant women use both HM and CM for self-medication. However, a relatively higher prevalence of HM than CM use is reported by pregnant women. Previous history of self-medication is significantly associated with self-medication. It is also significantly asso-

ciated with HM and CM use independently. Monthly income showed a significant association with self-medication in general and self-medication with herbal medicine. In general, and especially in self-medication with HM, awareness creation should be done for reproductive-age women about the risks of self-medication by both HM and CM through different techniques.

Ethics Approval and Informed Consent

Ethical clearance was received from the College of Medicine and Health Science Ethical Committee, Wollo University (CMHS/326/027/23). A letter of cooperation was written to Dessie Comprehensive Specialized Hospital and Permission was obtained. The purpose of the study was illustrated to the participants and verbal consent was obtained from each participant. The informed verbal consent process was approved by the College of Medicine and Health Science Ethical Committee, Wollo University and to ensure patient confidentiality, participants were not identified by names or other personal identifiers. The study was conducted under the Declaration of Helsinki.

Data Availability

The datasets used and/or analyzed during the current study are available from the corresponding author upon reasonable request.

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