

Herbal Medicine use and its Associated Factors among Pregnant Mothers at Mbarara City Health Center IV, Southwestern Uganda

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Abstract

Background. Despite advancements in modern healthcare and health delivery systems, the use of Herbal medicine among pregnant women remains increasingly prevalent in many parts of Sub-Saharan Africa, including Uganda and western Uganda. Herbal medicine is often perceived as affordable, culturally acceptable, and accessible. However, its use during pregnancy raises safety concerns for both mother and fetus. This study assessed the prevalence and factors associated with Herbal medicine use among pregnant mothers attending antenatal care at Mbarara City Health Centre IV.

Methodology; A cross-sectional descriptive study using researcher-administered questionnaires was conducted among 359 pregnant women. Data were analyzed using SPSS with both descriptive and inferential statistics.

Results: The prevalence of Herbal medicine use was 60.1%, with most usage occurring in the first trimester and mainly administered orally. Significant associated factors included age, marital status, antenatal care attendance, and cultural beliefs.

Further results show that the majority of participants who used Herbal medicine used it orally, which totals up to 158 participants making 43% of the participants who used Herbal medicine; the others, totaling up to 36 participants used Herbal medicine topically, making 10% of the participants who used Herbal medicine, while 7.5% used Herbal medicine both orally and topically among the participants who used Herbal medicine, a bigger percentage used it during first trimester, totaling up to 100 participants which accounts for 32.4% of the participants, followed by 81, which is 22.4%, who used it in second trimester and 2 (5.8%) who used it in the third trimester

Conclusion; The Study Concluded that Herbal Medicine use is Influenced by Cultural Norms, Perceived Safety, and Communication Gaps with Healthcare Providers. Health Education Interventions

CHAPTER ONE: INTRODUCTION

1.0 Introduction

This chapter explains the introduction, background of the study, problem statement, objectives of the study, scope of the study and conceptual frame work

1.1 Background

Globally, pregnant women often use herbal medicines such as ginger, garlic, peppermint, green tea, and fenugreek, with ginger and garlic the most often taken herbs during pregnancy (Molavi Vardanjani et al., 2022) for quite a number of reasons, especially pregnancy-associated problems like the fetus not turning, delayed birth, false labor, morning sickness, stomach discomfort, constipation, heartburn, a filthy or air-filled uterus, STDs, hypertension, and constipation (Mudonhi & Nunu, 2022a). With a global prevalence of 5.9–48.3 and 12 in pregnant women in developed countries and developing countries (Moyo et al., 2015), compared with sub-Saharan Africa with a prevalence of 90%, which is attributed to low levels of development, distance from the hospitals, and culture traditions that highly encourage use of Herbal medicine (Tugume et al., 2016), compared to Uganda with a prevalence of 70%, which is attributed to low levels of technology, traditional culture, and ignorance about dangers of Herbal medicine (Mudonhi & Nunu, 2022a) (Adane et al., 2020).

Pregnancy causes physiological changes that can lead to a variety of physiological conditions, such as nausea and vomiting, gastric disturbance, candida infection, labor induction, respiratory illnesses, and skin problems. Despite a lack of scientific evidence, women tend to avoid conventional drugs during pregnancy in favor of herbal supplements (Molavi Vardanjani et al., 2022).

Herbal medications are used by pregnant women for a variety of reasons, including pregnancy-associated problems such as nausea, vomiting, and labor enhancement, as well as pregnancy-related illnesses and diseases such as exhaustion, respiratory and skin concerns, and nutritional benefits. (Laelago et al., 2016).

Herbal remedies are also popular among pregnant women for a number of reasons, including their accessibility, the cultural and traditional beliefs that they may treat illnesses, the inexpensive cost, and the possibility that they are more effective than modern medicine.

Studies have shown that more and more pregnant women are using Herbal medicine however, there are concerns that these drugs may interact negatively with other contemporary medications, which might lead to difficulties (Nyeko et al., 2016).

Herbal medicine, also known as traditional medicine (TM), is defined by the World Health Organization (WHO) as health practices, knowledge, and values that include medicinal products, minerals and animals, religious therapies, manual activities, and exercises used either alone or in combination with being and disease management, treatment, and prevention (Adane et al., 2020) Despite the general belief that natural herbal treatment is safer, it is well known that natural drugs can have potent pharmacological effects that can have a negative impact on the fetus and pregnancy. These negative effects can range from teratogenicity to an increased tendency to bleed, as well as effects on neonatal hormones (Ahmed et al., 2018).

In many traditional communities, herbal medications are widely documented to have been used for inducing abortion; therefore, abortifacient chemicals produced from indigenous medicinal plants can substantially help the population of both developing and developed countries. For the majority of plant-based medicinal remedies in most countries, there are no specific guidelines for their use, and no science-based information is use-ally available for physicians (Nyeko et al., 2016).

Reliance on herbal remedies is relatively common among rural populations in Africa and is linked to a lack of access to public healthcare. Herbal medicine use may also be linked to perceived efficacy, safety beliefs, social and cultural influences, and general ease of access. Nevertheless, even in the setting of relatively high access to public healthcare (Mothupi, 2014), While most professional health practitioners are skeptical about the safety of using TM, they agree that traditional healers play a crucial complementary role in providing effective prevention and treatment of diseases. Early pregnancy treatment is thought to prevent miscarriage, ensure proper growth of the fetus, and ensure stability of the woman's health. Later pregnancy treatment with TM ensures a safe delivery and minimizes the likelihood of complications even after delivery (Mudonhi & Nunu, 2022a).

However, several studies have concentrated of types of herbal remedies used by pregnant mothers and the types of herbs used during pregnancy and the formulations neglecting the determinants and their prevalence. Most of the research studies done on Herbal medicine in pregnant mothers have been done in higher health facilities like regional and national referrals and urban health facilities, neglecting lower health facilities due to their remote nature. Of the pregnant mothers from such facilities utilize the different types of herbal remedies during pregnancy? Therefore, the aim of this research study was to explore the prevalence and determinants of Herbal medicine useamong pregnant mothers in lower facilities in developing countries.

1.2 Problem statement

Despite advancements in modern medicine and its related technology in the healthcare system and service delivery by both the World Health Organization and the Ministry of Health and local governments with their supporting non-government organizations, the use of Herbal medicine remains prevalent and growing at a steep gradient among pregnant women in many developing countries, including Uganda, especially southwestern Uganda (James et al., 2018) (Mudonhi & Nunu, 2022a). Which remains a big health concern to the ministry of health and Uganda as a country use of Herbal medicine can have significant implications for maternal and fetal health, potentially leading to adverse pregnancy outcomes (buyondo et al., 2018). And may end up claiming lives of pregnant mothers and their babies.

Some pregnant women in Uganda especially those attending antenatal care at lower health facilities maybe using Herbal medicine as an alterHerbal and complementary medicine (CAM) or primary health care remedies. However, there is lack of understanding regarding prevalence and factors associated with Herbal medicine useamong these pregnant women which may pose a significant health concerns to the lives of both women and fetus or mothers alone because of their harmful effects on the body and because of its interaction with conventional medicine and exacerbate some conditions, or cause teratogenicity effects (Molavi Vardanjani et al., 2022).

Despite the potential risks associated with Herbal medicine useamong pregnant mothers continue to use Herbal medicine during pregnancy in Uganda with an approximation of 60% of total women attending antenatal care relaying on traditional medicine for primary healthcare due to cultural beliefs perceived efficiency and accessibility (Atukunda et al., 2021) which may pose a big health concernTherefore, this study aims to investigate the prevalence of Herbal medicine useand identify the associated factors among pregnant women attending antenatal care at Mbarara City Health Centre IV.

1.3 Objectives of the study

1.3.1 General objective

To assess the prevalence of Herbal medicine use and associated factors among pregnant women at Mbarara city health Centre IV southwestern Uganda.

1.3.2 Specific objective

1. To determine the prevalence of Herbal medicine use among pregnant women.
2. To identify the associated factors to Herbal medicine use in pregnant women.

1.3.3 Research Questions

1. What is the prevalence of Herbal medicine use among pregnant women?
2. What are the associated factors with the use of Herbal medicine among pregnant mothers?

1.4 Significance of the study

1.4.1 To the Ministry of health

1. To help the Ministry of health to study the trends of utilization of Herbal medicine among pregnant mothers.
2. To help in more drug discovery processing, more herbs and using them for therapeutic purposes.
3. To help in designing of new drug therapy for pregnancy related illnesses and recommendations for treatment.

1.4.2 To Nursing Practice

1. To help nurses to recommend an alter Herbal source of treatment for pregnancy related conditions in patients and of low income.
2. To help the nursing profession to determine the complementary treatment among the patients with chronic illnesses.

1.4.3 Medical education

1. To help in curriculum development that is inclusion of Herbal medicine study in teaching of medical courses.
2. To help in policy making among the different medical councils in different countries.

1.5 Scope of Study

1.5.1. The geographical scope

Mbarara city health Centre IV is a government health located in Mbarara city in south western Uganda Opposite the independence park near Mbarara city council offices

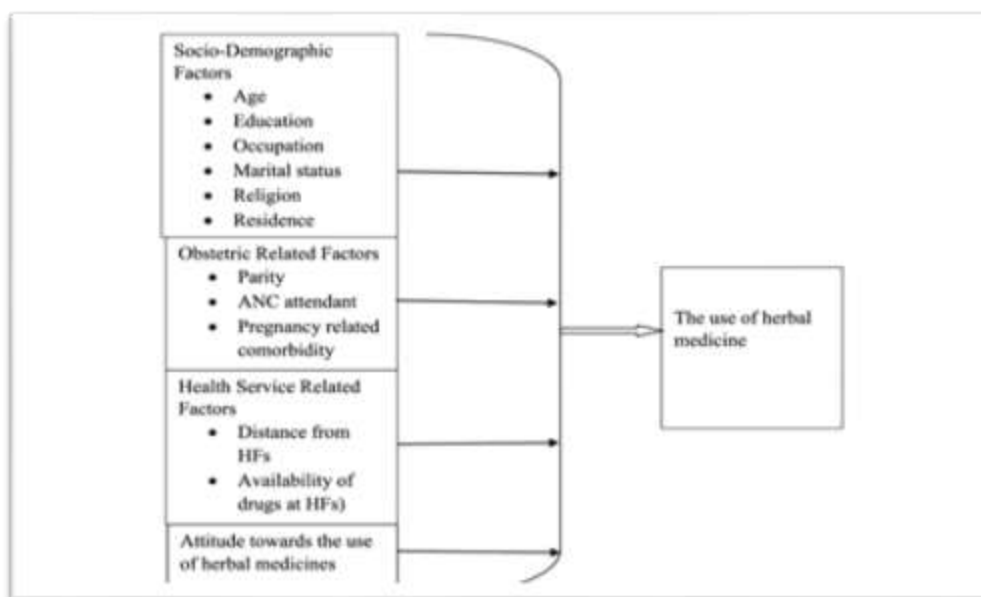
1.5.2. Content scope

The study was be carried out on pregnant women attending antenatal care at Mbarara city health Centre IV who voluntarily accepted to participate in the study and those who were be above 18 years of age and those who was be mentally health and oriented and willing to participate in the study

1.5.3 Time

The e study was conducted for two months from the month of February and March in which all the steps of the study shall be done.

1.6 Conceptual Frame Work



CHAPTER THREE: METHODOLOGY

3.1 Study Design

A cross-sectional descriptive study design was used that employed quantitative approach of data collection to describe the prevalence and determinants of Herbal medicine use among pregnant mothers. Mbarara city health Centre IV Mbarara city.

3.2 Study Setting

The study was conducted at Mbarara city health Centre IV, a government health facility located in Mbarara city in southwestern Uganda next to Mbarara city council offices opposite intendance park on Mbarara City High Street, a few.

3.3 Study Population

The study was carried out on all pregnant mothers attending antenatal care at Mbarara city health centre iv who were above the age of 18 years and were willing to consent to participate in the study.

3.4 Sample size determination

The sample size was estimated using the formula

Using Kish and Leslie's standard formula (1965), $N = Z^2 PQ/E^2$.

Where N is the sample size,

Z-score responding to 95% of confidence interval which is 1.96,

P= prevalence of Herbal medicine use= 0.69, (Ibanda et al., 2021)

$Q = 1 - P = 1 - 0.69 = 0.31$

E=Level of error expected which is 5% (0.05)

$N = (1.96)^2 \times 0.69 (0.31) / 0.05^2$

$N = 329$

5% non-response rate was added to the sample size

$5\% \times 329 = 17$

$= 346$

$= 359$ participants.

3.5 Sampling technique

Consecutive sampling technique was used. It involved the researcher offering a chance to those who met the inclusion criteria and are available during the study period. The rationale for using the consecutive sampling method is because it was easy to administer and provides a more realistic presentation of the target population as it includes participants as they naturally occur in the setting being studied.

3.6 Inclusion criteria

All pregnant mothers that were attending antenatal care at Mbarara City Health Center IV that were present during the period of data collection and ready to consent. Who were 18 years and above and mentally stable.

3.7 Exclusion criteria

Pregnant mothers that were attending antenatal care at Mbarara city health Centre IV who mentally unstable to participate in the study and those under the age of 18 years.

3.8 Study variables

3.81 Independent variables

Independent variables of the study were social-demographic data like name, religion, nationality, age, economic, and medical factors, knowledge, attitude and other determinants on Herbal medicine use.

3.82 Dependent variables

The dependent variable of the study was Herbal medicine use pregnant mothers attending antenatal care at Mbarara city health Centre IV.

3.9 Data collection tools

Data for the study was collected by the use of researcher-administered questionnaires, which was developed after reading relevant literature, (Dimene et al., 2020; Ibanda et al., 2021; Jimmy & Raymond, 2022; Muteebwa & Mayanja, 2021; Nabirye & Najjemba, 2017; Tumuhaise et al., 2021) data was collected by the help of research assistants, since mothers had different levels of literacy Open and closed ended questions were used on the questionnaire and research assistants was interpret the questions for the respondents (Mekuria et al., 2017).

3.10 Study procedure

Face to face researcher administered questionnaire were administered to patients within in the hospital by research assistants, and they interpreted for those that don't listen to English.

3.11 Quality control (reliability) and validity

For quality and reliability of results, the researcher did pre-testing of the questionnaires that was given to pregnant mothers at Bizibwera HC IV, supervised, checked, and edited to ensure that the tool collected the required data. This is because pregnant mothers shared the same characteristics with the rest of the pregnant mothers in the developing country like Uganda, and this was give the construct validity and improve efficiency during data collection.

3.12 Data collection procedure

Upon approval by the supervisor, a permission letter for data collection obtained from the head of the Department of Nursing at Bishop Stuart University (BSU). After getting permission, the researcher explained to the respondents the importance of the data needed. Each day during data collection, the researcher identified the eligible respondents. The researcher informed the respondents about the study; the purpose of the study, information that is expected from them, assurance of confidentiality and anonymity, and their right to withdraw from the study. The researcher collected data through researcher-administered Google questionnaires from a maximum of 10 clients per day and each interview lasted at least between 10 and 20 minutes to avoid losing the respondent's concentration.

The study focused on primary data, which was collected using a semi-structured questionnaire that was self-directed. The questionnaire was divided into four sections: the client's demographics, the questions that gather information on the social, demographic, economic, and medical status of a client, and ones that gathered information about the determinants of Herbal use. The reason for using questionnaires is they are easy to use and save time during data collection.

3.13 Data management and analysis

The filled questionnaires were cleaned, cross-checked, and coded for completeness immediately before leaving the data collection field, and made sure that errors are minimized during data entry.

Data was scrutinized to eliminate any errors that may occur during data entry. Data shall be kept under lock and key and was only be accessed by the researcher. Data was organized, edited, and coded; the demographic data was analyzed using SPSS and presented on pie charts, percentages, and frequencies with both unilabiate for social characteristics and bivariate and multivariate analyses.

3.14 Data Analysis and presentation

The data entered into Microsoft Excel version 2016, cleared, and then imported to SPSS for analysis. Analysis and presentation were done per objective of the study using descriptive statistics, which was also include univariate for social characteristics and bivariate and multivariate analyses.

3.15 Ethical considerations

An approval letter was provided by the supervisor, then permission for data collection was provided by the head of department, Bishop Stuart University. The researcher explained the general purpose of the study to the respondents and seeked consent from them before filling out the questionnaire. The individuals were required not to include their names in order to ensure confidentiality regarding the information that was obtained. This kind of hierarchy in research was in line with ethics in research considerations.

3.16 Limitations of the study

The study was limited by the following factors:

Limited time to carry out a comprehensive study alongside other academic course unit. The researcher, however, shall utilize the available time possible to make sure the study is completed on time alongside academics. High cost for stationery, typing, transport, and other related costs like time. This shall be solved by properly using available funds, and the researcher does most of the work, like typing questionnaires and collecting them by himself.

The researcher faced the challenge of lack of cooperation of some participants, which may affect data collection. This was overcome by informing participants that the study is only for academic purposes; induced participants to give full information on the study.

3.17 Dissemination of findings.

The information that was generated in the study, a copy was disseminated to the Bishop Stuart University library, the supervisor, the HOD-Nursing of Bishop Stuart University, and a copy to the researcher.

CHAPTER FOUR: STUDY RESULTS

4.0 Introduction

This chapter presents the results of the study according to the study objectives. Results are presented in tables and figures and explained in detail in texts. For most findings, tables have been used in the presentation of the gathered information. A total of 359 respondents were interviewed during the period of data collection yielding a 99% response rate.

4.1 socio-demographic information of the study population

This section contains characteristics of study participants, results of the analysis of socio-demographic factors. In this study, gender, age, religion, course of study, marital status, gravidity, tribe, education level, monthly income, religion, and tribe were the social demographic characteristics of the study participants that were assessed.

The findings show that out of the 359 questionnaires that were distributed with a 99% response, a bigger percentage were between 25 and 35 years at 63.5%, and the least percentage, 4.5%, were above 35 years. Only 49% of the clients were married, 39.6% and 11.4% were single mothers. According to the religion, most of the participants were Protestants, accounting for 36%, and the least were Seventh-day Adventists at 3.9%.

A bigger percentage of participants were peasants, accounting for 49.3%, and the least were civil servants. On gravidity the majority were prime gravida, accounting for 48%, and the least were grand multi gravida, who were the least at 6.9%.

Most mothers' reports earning less than 200,000 shillings per month, accounting up to 50.1% and the least 12.8% earning above five hundred thousand Uganda shillings.

Most of the participants were in the second trimester of their pregnancy; that's is 53.5% of the total mothers, 31.1% were in their first trimester.

According to the results, it shows that majority 263 (72.9%) had ever attended antenatal care, whereas 77 (21.3%) had never attended.

A bigger number of participants 193 (53.5%) had never discussed Herbal medicine use with health workers, and 154 (42.7%) had ever.

On family support of Herbal medicine use 163 (45.2%) said their families and culture support Herbal medicine use, while the minority, 31 (5.6%), were not sure of the family support.

According to the results, the majority of churches, 229 (63.4%), don't support Herbal medicine use. Further results show that 181 (50.1%) had ever gotten pregnancy-related comorbidities and 166 (48%) had never gotten them, and the majority, 161 (44.6%), of them solved the comorbidities using Herbal medicine, and 67 (18.4%) used western medicine, and in 167 (46.3%) the comorbidity went after using Herbal medicine 74 (20.5%) never went. From the results, the majority, 155 (42.9%), say they think it's good to use Herbal medicine during pregnancy; 147 (40.7%) say no.

From the table, 139 (38.5%) thinks Herbal medicine is safe during pregnancy, and 173 (47.9%) thinks it's not good, and the majority, 270 (74.8%), are aware of side effects of Herbal medicine, and 91 (25.2%) thinks it's bad to use Herbal medicine.

Table 1: Demographic characteristics of participants

Variable		Frequency	Percentage
Age	18-25 years	115	32.0
	25 -35years	228	63.5
Marital status	above 35	16	4.5
	divorced	142	39.6
	married	176	49.0
	single mother	41	11.4
Religion	born again	72	20.1
	catholic	89	24.8
	Muslim	55	15.3
	protestant	129	35.9
	seventh day Adventist	14	3.9
Occupation	business woman	138	38.4
	civil servant	44	12.3
	peasant	177	49.3
Gravidity	grand multigravida	22	6.1
	gravida 2- 4	162	45.1
	prime gravida	173	48.2
	prime gravida, gravida 2- 4	2	.6
monthly income	above 500,000	46	12.8
	between 200,000 and 500,000	130	36.2
			.3
	less than 200,000	180	50.1
ANC attendance	Yes	263	72.9
	No	77	21.3
	Maybe	21	5.8
Discussion of Herbal medicine with health provider	Yes	154	42.7
	No	193	53.5
	Maybe	14	3.9
family and culture support use of Herbal medicine use	Yes	163	45.2
	No	167	46.3
	Maybe	31	8.6
church support of Herbal medicine	Yes	124	34.3
	No	229	63.4
	Maybe	8	2.2
pregnancy-related comorbidity	Yes	181	50.1
	No	166	46.0
	Maybe	14	3.9
	Maybe	49	13.6
Knowledge of the side effects of Herbal medicine	Yes	270	74.8
	No	91	25.2

4.2 prevalence of Herbal medicine use

The prevalence of Herbal medicine use was assessed by three questions that included, have you ever used Herbal medicine? If yes, trimester used Herbal medicine? and in which trimester did you use the Herbal medicine. According to the results, a bigger percentage of the participants have ever used Herbal accounting, 60.1 (217), while 144 (39.9) had never used Herbal medicine. According to the above results, it shows that 263 (72.9%) had ever attended antenatal care, whereas 77 (21.3%) had never attended antenatal care.

Further results show that 181 (50.1%) had ever gotten pregnancy-related comorbidities and 166 (48%) had never gotten them. Among the participants who used Herbal medicine, a bigger percentage used it during first trimester, totaling up to 100 participants which accounts for 32.4% of the participants while the least 2 (5.8%) who used it in the third trimester

Table 2 showing the prevalence of Herbal medicine use

	Frequency		Percentage
Ever used Herbal medicine	No	144	39.9
	Yes	217	60.1
Method of Herbal medicine use, if ever used	orally	158	43.8
	orally, tropically	27	7.5
	tropically	36	10.0
Trimester in which Herbal medicine was used	1st (1-3)months	117	32.4
	2nd (3-6)	81	22.4
	3rd (3-9)months	21	5.8

4.2 Factors Associated Herbal Medicine use

4.2.1 Bivariate Analysis for Factors Associated with Medicine use

According to findings of the study about the factors associated with Herbal medicine use the comparison between Herbal medicine use and demographic characteristics of participants which showed that age, marital status and occupation were statistically significant to Herbal medicine use with p values 0.000, 0.046 and 0.061 unlike religion and gravidity which were statistically insignificant with p values 0.97, 0.103 respectively. Also, education level, monthly income are statistically insignificant compared to location of occupation were statically significant with p value of 0.014.

On the obstetric factors associated with Herbal medicine use, which was assessed by three questions: have you ever gotten any pregnancy-related comorbidity, have you ever discussed medicine use with a health worker, and what was health worker's comment? The results show that all obstetric factors are statistically significant to Herbal medicine use with all having p values of 0.000

According to health and cultural related factor associated with Herbal medicine use which was assessed by question; are you aware of side effects of Herbal medicine, does your family support Herbal medicine use, does your church support Herbal medicine use, do you think Herbal medicine is safe during pregnancy and what is the distance to the nearest facility and according to the results they were all statistically significant at p value 0.00

In Conclusion the majority of the pregnant mothers had ever used Herbal medicine all health and cultural related and obstetric factors were statistically significant to Herbal medicine use and some of social demographic characteristics of participants were significant

Table bivariate analysis for factors associated with medicine use

Variable	Range	Have you ever used Herbal medicine		X ²	df	P value
		Yes	No			
Age	18-25	85(39.5%)	31(21.5%)	21.029 ^a	2	.000
	25-35	116(54.0%)	111(77.1%)			
	Above 35	14(6.5%)	2(1.4%)			
Marital status	Married	118(54.9%)	60(41.7%)	6.165 ^a	2	0.046
	Single mother	23(10.7%)	18(12.5%)			
	Divorced	74(34.4%)	66(45.8%)			
Religion	Munyankole	76(35.3%)	53(36.8%)	.341 ^a	4	.987
	Musoga	55(25.6%)	34(23.6%)			
	Muganda	44(20.5%)	28(19.4%)			
	Munyoro	32(14.9%)	23(16.0%)			
	Munyarwanda	8(3.7%)	6(4.2%)			

Occupation	Peasant	96(44.7%)	81(56.2%)	5.599 ^a	2	0.061
	Business	93(43.3%)	45(31.2%)			
	Civil servant	26(12.1%)	18(12.5%)			
Gravidity	Gravida 1	106(49.3%)	66(45.8%)	6.185 ^a	3	0.103
	Gravida 2	90(41.9%)	73(50.7%)			
	Gravida 3	18(8.4%)	4(2.8%)			
Education	Bachelors	26(12.1%)	13(9.0%)	10.737 ^a	5	0.057
	Diploma	29(13.5%)	14(9.7%)			
	Certificate	34 (15.8%)	28(19.4%)			
	Secondary	77 (35.8%)	70(48.6%)			
	Primary	47(21.9%)	19(13.2%)			
	Masters	2(0.9%)	0(0.0%)			
location of Occupation	Rural	94(43.7%)	82(56.9%)	6.034 ^a	1	0.014
	Urban	121(56.3%)	62(43.1%)			
Monthly income	Less than 20000	104 (48.4%)	76(52.8%)	2.912 ^a	4	0.573
	Between 20000 and 5000	81 (37.7%)	48 (33.3%)			
	Above 500000	27 (12.6%)	20 (13.9%)			
Ever attended antenatal care	Yes	196 (91.2%)	66(45.8%)	90.177 ^a	2	.000
	No	16(7.4%)	60(41.7%)			
	Maybe	3(1.4%)	18(12.5%)			
Ever discussed the use of Herbal medicine with your health care provider	Yes	131(60.9%)	22(15.3%)	75.171 ^a	2	.000
	No	76(35.3%)	116(80.6%)			
	Maybe	8(3.7%)	6(4.2%)			
ever got any pregnancy related comorbidity in any pregnancy	Yes	144(67.0%)	35(24.3%)	63.559 ^a	2	.000
	No	67(31.2%)	99(68.8%)			
	Maybe	4(1.9%)	10(6.9%)			
health workers' comment	Discouraged	99(46.9%)	15(10.4%)	52.991 ^a	2	.000
	Encouraged	101(47.9%)	112(77.8%)			
	Didn't comment	11(5.2%)	17(11.8%)			
Aware of any of the side effects of Herbal medicine	Yes	146(67.9%)	122(84.7%)	12.886 ^a	1	.000
	No	69(32.1%)	22(15.3%)			
family and culture support use of Herbal medicine	Yes	149 (69.3%)	12(8.3%)	133.072 ^a	2	.000
	No	51(23.7%)	116(80.6%)			
	Maybe	15(7.0%)	16(11.1%)			
church support of Herbal medicine	Yes	106(49.3%)	17(11.8%)	59.719 ^a	3	.000
	No	102(47.4%)	126(87.5%)			
	Maybe	7(3.3%)	1(0.7%)			
distance to the nearest hospital	5-10km	114(53.0%)	48(33.3%)	42.840 ^a	3	.000
	Very near	53(24.7%)	17(11.8%)			
	10-20km	41(19.1%)	74(51.4%)			
	More than 20	7(3.3%)	5(3.5%)			

Note (P<0.05, statistical significance)

4.2.2 Multivariate analysis for factors associated with medicine use

General linear model for factors affecting Herbal medicine

According to findings of the study about the relationship with Herbal medicine use the comparison between Herbal medicine use trimester of Herbal medicine use and demographic other factors of participants which showed statistically significance between church supporting Herbal medicine, solving the comorbidity, reason for using Herbal medicine, and attending antenatal care and Herbal medicine and its trimester with p values 0.000, 0.04, 0.000, 0.03, 0.02 and 0.00 unlike the rest of the factors that were insignificant.

Variable	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Age	ever used Herbal medicine	.076	1	.076	.736	.392
	Trimester used Herbal medicine	.188	1	.188	.505	.478
Marital status	Ever used Herbal medicine	.025	1	.025	.243	.623
	Trimester used Herbal medicine	.210	1	.210	.565	.453
Education level	Ever used Herbal medicine	.583	1	.583	5.622	.018
	Trimester used Herbal medicine	.268	1	.268	.723	.396
Current pregnancy trimester	Ever used Herbal medicine	.472	1	.472	4.550	.034
	Trimester used Herbal medicine	.571	1	.571	1.538	.216
Ever discussed medicine use with health worker	Ever used Herbal medicine	.032	1	.032	.312	.577
	Trimester used Herbal medicine	.744	1	.744	2.005	.158
church support Herbal medicine	Ever used Herbal medicine	.410	1	.410	3.950	.048
	Trimester used Herbal medicine	1.241	1	1.241	3.345	.068
	Trimester used Herbal medicine	9.822	1	9.822	26.464	.000
What was the reason for using Herbal medicine	Ever used Herbal medicine	.901	1	.901	8.689	.003
	Trimester used Herbal medicine	4.622	1	4.622	12.454	.000
Ever discussed Herbal medicine with care provider	Ever used Herbal medicine	.187	1	.187	1.805	.180
	Trimester used Herbal medicine	.370	1	.370	.997	.319
Health workers comment	Ever used Herbal medicine	.051	1	.051	.494	.483
	Trimester used Herbal medicine	2.536	1	2.536	6.834	.009
The distance to the nearest hospital	Ever used Herbal medicine	.039	1	.039	.376	.540
	Trimester used Herbal medicine	.330	1	.330	.890	.346
	Trimester used Herbal medicine	.679	1	.679	1.830	.177
Aware of any of the side effects of Herbal medicine	Ever used Herbal medicine	.013	1	.013	.127	.721
	Trimester used Herbal medicine	.081	1	.081	.218	.641
Have you ever attended antenatal care	Ever used Herbal medicine	1.559	1	1.559	15.027	.000
	Trimester used Herbal medicine	.827	1	.827	2.228	.137

Note (P<0.05, statistical significance)

CHAPTER 5: DISCUSSION, CONCLUSION, AND RECOMMENDATIONS

5.0. Introduction

This chapter discusses the research findings about the problem statement and literature review of studies conducted elsewhere and in line with the specific study objectives. It also explains the obtained results from the study.

5.1 prevalence of Herbal medicine

Prevalence of Herbal medicine use The study found that 60.1% of pregnant women reported ever using Herbal medicine. This high prevalence aligns with prior research in Uganda and Sub-Saharan Africa, where Herbal or traditional medicine usage among pregnant women ranges from 12% to 93% (Glover-Amengor et al., 2022; James et al., 2021). Which is due to its cultural significance, local availability, and perceived safety that is accelerated by family and community influence particularly from elders and traditional birth attendants, shapes perceptions and decisions regarding Herbal therapies. And therefore a strong health education, education especially to the community.

The majority used Herbal medicine orally (75.2%), while smaller percentages applied it topically (16.5%) or both (8.3%). This is consistent with research indicating that ingestion remains the most common method of herbal administration in African settings due to the belief that internal application has stronger effects (WHO, 2016). Notably, 32.4% of users began in the first trimester, when fetal development is most critical. This poses significant safety risks, especially with unregulated herbal products (Kennedy

et al., 2020). Many mothers used herbs for treating pregnancy-related comorbidities, often based on advice from family or traditional birth attendants rather than trained professionals.

Further results show that among the pregnant mothers who used Herbal medicine, the majority used it orally, that is, by mouth or ingestion, which accounts for 158 (75.2%) of the participants. Others, totaling up to 36 (16.5%), used Herbal medicine topically, while the rest used Herbal medicine both orally and topically, accounting for 23 (8.3%), which agrees with other research. And this may be linked to localized symptoms like skin irritation or swelling. However, oral ingestion poses greater risks, including exposure to potentially teratogenic compounds, contamination, or dosage inconsistencies. And to mitigate these risks, it is recommended that healthcare providers routinely inquire about Herbal medicine use during antenatal visits, educate mothers on safe practices, and collaborate with traditional healers to identify and regulate commonly used herbs.

Among the participants who used Herbal medicine, a bigger percentage used it during the first trimester, totaling up to 100 (32.4%) of the participants, followed by 81 (22.4%) who used it in the second trimester and 21 (5.8%) who used it in the third trimester, the same as the study done at Mbarara Regional Referral to assess the factors affecting Herbal medicine use, which showed that the prevalence of herbal medicine use in pregnancy was 70.4% (271). Of 271 who used herbal medicine in pregnancy, 43.5% used them during the first trimester, which likely reflects early pregnancy discomforts such as nausea and vomiting but poses high risks to fetal development, and therefore health workers should always target antenatal education and early screening to promote safer alternatives and informed choices.

Factors Associated with Herbal Medicine

Results indicated that age ($p = 0.000$), marital status ($p = 0.046$), and area of residence ($p = 0.014$) were significantly associated with Herbal medicine use, which means that Younger and middle-aged women (18–35 years) were more likely to use Herbal medicine, which is more likely due to peer influence by family members and elders or limited experience with antenatal care (Molavi Vardanjani et al., 2022).

Women in urban areas were more likely to use Herbal medicine compared to those in rural areas, possibly due to easier access to both traditional and western options. However, religion, education level, and income were not statistically significant. This suggests that cultural norms and beliefs highly influence Herbal medicine more than education or economic status. Which is most likely due to a wide exposure to many treatment options available and accessible.

Obstetric factors such as antenatal care attendance, comorbidities during pregnancy, and discussions with healthcare providers were all significantly associated ($p < 0.001$) with Herbal medicine use. Women who never attended ANC and those who had limited visits were more likely to self-medicate with Herbal medicine, indicating a knowledge gap and need for strengthening health service. Women who had pregnancy complications were significantly more likely to use Herbal medicine.

The logistic regression analysis confirmed an odds ratio of 0.50 for those who solved comorbidities using other means compared to Herbal medicine with a p -value = 0.045 and more so which is mostly linked to cultural and family support for Herbal medicine with a strong association with Herbal medicine usage with a p -value < 0.001 and therefore a strong intervention is highly needed especially to mothers during early visits.

The belief that Herbal medicine is safe or effective increased likelihood of use of Herbal medicine with an odds ratio of 2.72 and a p -value of 0.001. Which is highly linked to culture and religious beliefs that Herbal medicine is safe that later transform information to young generation hence increasing Herbal medicine use especially in the first trimester (Mudonhi & Nunu, 2022a).

The general linear model indicates that the most significant factors associated with Herbal medicine use among pregnant mothers included education level ($p = 0.018$). Current pregnancy trimester ($p = 0.034$) Cultural support for Herbal medicine ($p = 0.018$) Church support ($p = 0.048$) Comorbidity resolution method ($p < 0.001$) Perceived effectiveness ($p = 0.017$) Source of recommendation ($p = 0.003$), and this indicates that social norms, cultural acceptance, and past experiences with Herbal medicine are more influential than education or income level on Herbal medicine use. Discussing with healthcare workers had a protective effect against Herbal medicine use (OR = 0.43, $p = 0.015$), indicating the significance of health workers in fighting Herbal medicine use.

In conclusion, the study found that a majority of pregnant mothers at Mbarara Municipal Health Centre IV used Herbal medicine, with cultural norms, family beliefs, previous experience with comorbidities, and lack of health education being key contributors. Although a lot of pregnant mothers attend antenatal care, significant gaps remain in communication on Herbal medicine use. Several socio-demographic and obstetric factors were associated with Herbal medicine use, but multivariate analysis narrowed the key factors to cultural support, perception of safety, trimester of use, and method of solving comorbidities. This reduces the multidimensional nature of the problem rooted in social, cultural, and health system factors.

Recommendations

Strengthen health education during antenatal care whereby health workers should incorporate discussions on Herbal medicine use into routine antenatal care visits. Clear messaging about risks during the first trimester is more essential.

Community awareness and Sensitization to engage cultural leaders, religious leaders, and traditional birth attendants to educate communities on safe pregnancy practices and the dangers of Herbal medicine.

Research especially pharmacological research on commonly used Herbal herbs to determine safety and efficacy. Where by the Ministry of Health should establish a regulatory framework for traditional medicine use during pregnancy.

Improve Accessibility to maternal health services, which may address barriers to antenatal care attendance such as cost, distance, and provider attitudes by expanding outreaches to remote communities in rural areas.

Integrate Cultural consideration in maternal care. Health workers should be trained to respect cultural beliefs while gently guiding mothers toward evidence-based practice.

Limitations of the study

Participants were found attending antenatal care at the time of data collection whereby they were all attentive to health workers and some had pregnancy related comorbidities like nausea, and vomiting it was therefore difficult to find them free and ready to give out data during data collection.

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APENDICES

Appendix I: Informed Consent Form

TOPIC: Herbal Medicine use and its Associated Factors among Pregnant Women at Mbarara City Health Centre

Dear Respondents,

Good morning/good afternoon.

My name is **MWEBEMBEZI SAMUEL** pursuing a bachelor’s degree in nursing science at Bishop Stuart University. I am carrying out research on the “**prevalence of Herbal medicine use and its associated factors among pregnant women at Mbarara City Health Center.**” As a partial fulfilment for the award of bachelor’s degree in nursing science

I kindly request you to participate in this research by answering the few questions that was take a few minutes about the above topic. The data collected was be treated with confidentiality and used for academic purposes only.

Your participation is highly voluntary, and you have a right to withdraw at any point. your information shall be handled with confidentiality

Instructions

- You are requested to be as genuine and truthful as possible with your answers.
- Do not include your name anywhere
- Fill in all the necessary information by ticking in the box or writing in the space provided With the appropriate response.
- Hand over the information to the research assistant.

APPENDIX II QUESTIONNAIRE

Tick the appropriate answer

Ser.No	Questions	Responses	Tick Appropriately
Section A: Socio-demographic and economic characteristics of participants			
1	Age	1. 18-25 years	
		2. 25-35 years	

		3. Above 35 years	
2 Marital status		1. Married	
		2. Divorced	
		3. Single mother	
3	Gravidity	Prime gravida	
		Gravida 2 - 4	
		Grand multi gravida	
	Religion	Protestants or Anglicans	
		Catholics	
		Muslim	
		Born again	
		Seventh day Adventists	
		Others identify.....	
		4.	
3	Occupation	1. Business	
		2. peasant	
		3. . Another	
4	Nationality	Ugandan	
		East African	
		Non east African	
		Non-African	
5	Tribe	Munyankole	
		Muganda	
		Munyarwanda	
		Mukiga	
		mutooro	
		Others mention	
6	Education level	Primary	
		Secondary	
		Certificate	
		Diploma	
		Bachelor's degree	
		Master's degree	
		PHD	
	Location of occupation	rural	
		urban	
	Monthly income	less than 200,000	
		Between 200,000 and 400,000	
		Above 500,000	

Obstetric and maternal health characteristics			
	pregnancy trimester	1 st trimester (1-3 months)	
		2 nd trimester (3-6 months)	
		3 rd trimester (6-9 months)	
	Number of pregnancies		
	Have you ever attended antenatal care		
	Number of antenatal care visits		
			No
	Have you discussed the use of Herbal		Yes

	medicine with your health care provider	No	
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	Does your family and culture support use of Herbal medicine	Yes	
		No	
	Does your church support of Herbal medicine	Yes	
		no	
	Do you think family and religion influence the use of Herbal medicine during pregnancy	Yes	
		No	
		Not Sure	
	Did you get any pregnancy related comorbidity in current pregnancy	Yes	
	If yes mention the comorbidity	no	
	Did the comorbidity go after using the medicine		
	Did use Herbal medicine alone or with western medicine	Herbal medicine	
		Western medicine	
	In which trimester did you use Herbal medicine	1 st	
		2 nd	
		3 rd	
	What was the reason for using Herbal medicine	cheap	
		Easily available	
		Western medicine failed to work	
		Recommended by someone	
		It's part of culture	
	If it was recommended who recommended it	Family	
		Self	
		Health care provider	
		Friend	
	Did u discuss use of Herbal medicine with your health care provider	Yes	
		No	
	If yes what did your health care provider say about it	Discouraged	
		Recommended	
		No comment	
	Health related		
	What's the distance from the nearest health facility	Very near 2-5km	
		5-10	
		10-20	
		Above 20	
	Attitudes		
	Do you think it's good to use Herbal medicine	yes	
		no	
	do you think Herbal medicine is safe during pregnancy	Yes	

APPENDIX V MAP