Prevalence and factors associated with use of herbal medicine among pregnant women in an urban tertiary hospital in Uganda – a cross-sectional survey

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Herbal medicine is used by pregnant women in Uganda to achieve therapeutic goals like induction of labour and control of postpartum haemorrhage. This study aimed at finding out the prevalence and determinants of herbal medicine use during pregnancy by women in an urban tertiary hospital in Uganda. In this cross-sectional survey, 520 postpartum women participated after informed consent. Data on demographic characteristics and self-reported use/non-use of herbal medicine in the just ended pregnancy were collected. Using modified Poisson regression model, factors associated with use of herbal medicine in pregnancy were determined. Prevalence of herbal medicine use in pregnancy was 69.8 %(363/520). Use of herbal medicine in past pregnancy (PR=3.23, 95% CI=2.23-4.67), believing that herbal medicine is safe (PR=1.1 95% CI=1.01-1.21), and advise by family members to use herbal medicine (PR=1.64, 95% CI=1.04-2.59) were determinants of use herbal medicine during pregnancy. Majority of pregnant women in urban Mulago hospital use herbal medicine to treat common complaints. Further research is needed to document the herbs, their efficacy, and possible effects on birth outcomes.

Key words: Herbal medicine, Urban, Pregnancy, Uganda

INTRODUCTION

The use herbal medicine is widely reported in the developing and developed countries [1-3]. Although there are potential benefits of using herbal medicine such as affordability and acceptability, its safety has been an area of contention [4, 5]. The use of herbal medicine is more prevalent in the poorer countries although its use has been reported globally. Different herbs are used among different communities to treat ailments that are common in pregnancy [6].

Some herbs like ginger have been studied and found to be safe and useful when used by pregnant women [7, 8]. Most of the herbal medicines are used without ever going through the necessary safety and efficacy trials and are used with minimal regulatory oversight [9-11]. Use of herbal medicines has been associated with adverse effects like rupture of the uterus in pregnancy [12]. Across Africa, nausea in pregnancy is the commonest reason for use of herbal medicine by pregnant women [13]. Some women in Western Uganda use medicinal plants to induce and ease childbirth [14, 15]. Pregnant women in Gulu use herbal medicine to treat nausea, vomiting, abdominal pain, and fevers [16]. People living in rural areas are more likely to use herbal medicines than those in urban areas with some differences in indications for use [17]. This study aimed at finding the proportion of women in an urban tertiary hospital in Uganda using herbal medicine during pregnancy and the factors associated with its use.

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METHODS

Study design and setting

The study was a cross sectional survey conducted in the postnatal ward of an urban tertialy hospital. Kawempe National Referral Hospital is located in Kampala district, 6km from Kampala city centre. It offers comprehensive gynecology and obstetrics services to women residing in Kampala and those referred from other health centres in Uganda. The data was collected between January 2019 and March 2019. In a month, between 2200 and 2500 women deliver at Kawempe. Women who come for delivery are assessed. Following normal delivery, mothers are admitted for 24 hours in the postnatal ward for observations, and those who deliver by Caesarean section are discharged after 3 days. If a woman gets complications of birth/puerperium, she may be treated in hospital for longer than 3 days.

Sample size estimation

Using Kish Leslie formula for determination of population proportion [18], a sample size of 243 women was calculated. And using the formula for power calculation in logistic regression with a binary covariate [19], a sample size of 520 women was calculated for factors associated with use of herbal medicine.

Study population

The study population were mothers who had delivered in Kawempe National Referral Hospital during the study period. Inclusion criterion was mothers in postnatal ward following delivery . Mothers who were very sick or were in the high dependency unit were excluded from the study.

Sampling procedure and data collection

Systematic sampling was used in recruiting participants. The patient registry in the postnatal ward was the sampling frame. Every fourth woman on the registry was approached and recruited after informed consent. Data were collected using an interviewer-administered questionnaire. The questions asked included participant characteristics like age, parity, education levels, and others and self-reported use of herbal medicine in the just concluded pregnancy. Herbal medicine use was defined as a plant/plant-part that is used to treat any condition.

Data analysis

Data cleaning was done, followed by data entry in EPIDATA Software. Subsequently, data were imported into Stata 14 software for statistical analysis. A summarised description of the sample was achieved using summary statistics for characteristics like age, parity and others. The proportion of women who reported having used herbal medicine while pregnant was determined by the fraction of those who used over the total sample size.

To determine factors associated with use of herbal medicine, bivariate and multivariate analysis was done. In bivariate analysis comparison, proportions of herbal medicine use among factors was done using Pearson Chi square for categorical data. Medians were compared using Wilcoxon's rank sum test. Variables whose P-values of unadjusted Incident rate ratios (at bivariate level) were less than 0.1 were considered for multivariable analysis to find factors that significantly determine use of herbal medicine. Modified Poisson regression was used as an alternative to logistic regression to determine factors associated with use of herbal medicine in pregnancy because the prevalence of the dependent variable was greater than 10%. Modified Poisson regression analysis, when used in prevalence studies where there is high prevalence of the outcome variable, yields less biased results than logistic regression [20, 21].

Ethical approval and consent to participate

Ethical approval was obtained from the School of Medicine Research Ethics Committee of Makerere University (REC Reference Number: 2018-182) . Informed consent was sought from participants, and a written consent form signed before participants took part in the research.

RESULTS

Participant characteristics

Table 1 shows details of demographics and obstetric history of the study population.

Table 1 Participant characteristics

Participant characteristics	Frequency (%), n=520
Age(years), median(IQR)	22 (20-23)
15-19	66 (12.8)
20-24	161 (31.1)
15-29	153 (29.6
30-34	95 (18.4)
35-39	37 (7.2)
40-44	5 (1.0)
Education level	
No formal Education	14 (2.7)
Primary	164 (31.7)
Secondary	268 (51.7)
Tertiary	72 (13.9)
Marital status	
Never married/single	47 (9.1)
Married	459 (89.3)
Divorced	6 (1.2)
Widowed	2 (0.4)
Mode of delivery	
Caesarean	129 (29.9)
Normal	303 (70.1)
Parity, median(IQR)	2 (1-3)
≤2	312 (61.8)
>2	193 (38.2)
History of miscarriage	
Never	438 (86.7)
At least 1(1-8)	67 (13.3)

IQR: interquartile range

The median age of the participants was 22years. Majority of participants (303, 70.1%) had delivered vaginally. Most of them were married (459, 89.3%) and (14, 2.7%) had no formal education.

Herbal medicine use during pregnancy

Majority of the participants (363, 69.8%) reported using herbal medicine in the just concluded pregnancy. The main reasons given for using herbal medicine were to get energy (140, 38%), prevent Cesarean delivery (134, 34.1%) and make vaginal delivery easy (48, 13.1%). Some partcipants reported more than one reason for using herbal medicine during pregnancy. Details of other reasons given for using herbal medicine are shown in Table .

Table 2: Reasons for use of herbal medicine in pregnancy

Reason For Use of herbal medicine	Frequency(%)
Getting energy	140(38.6)
Avoid Caesarean section	134(34.1)
Make vaginal delivery easily	48(13.2)
Abdominal pain	11(3.0)
Prevent Neonatal Jaundice	21(5.8)
Clean the Baby's Skin	27(7.4)
Prevent diseases	16(4.4)
Increase Blood levels	19(5.2)
Gives luck to the baby	19(5.2)
Avoiding Vaginal tears	7(1.9)
Stop vomiting	15(4.1)
Prevent Malaria	17(4.7)
For better positioning of the baby	10(2.9)

Factors associated with use of herbal medicine in pregnancy

Using bivariate analysis, it was found that women having their second or first delivery (p=0.004 (95%CI [1.10,1.40]), those advised by family member (p=0.004 (95%CI [1.31,4.13]) and those who had used herbal medicine in past pregnancies (p<0.001 95%CI [2.84,4.6]) were more likely to use herbal medicine while pregnant. Multivariate

analysis revealed that women who had attained tertiary education were less likely to use herbal medicine during pregnancy (PR 0.71; 95%CI [0.58,0.87]). Women having their first or second pregnancy (PR=1.22, 95%CI [1.08,1.39]), those advised by family members to use herbal medicine (PR=1.64, 95%CI [1.04-2.59]), those who had used herbal medicine in previous pregnancies (PR=3.23, 95%CI [2.23,4.67]) and those who believed that herbal medicine is safe in pregnancy(PR=1.1, 95%CI [1.01,1.21]) were more likely to use herbal medicine. Details of bivariate and multivariate analyses of factors associated with use of herbal medicine in the just concluded pregnancy are shown in Table 3.

DISCUSSION

The study shows that more than half of partcipants had used herbal medicine while pregnant. The main reasons for use of herbal medicine were to avoid Caesarean section, to get energy, treat nausea and vomiting and ease the delivery. The pregnant women were more likely to use herbal medicine if they were illetrate, had previosuly used herbal medicine, thought that herbal medicine is safe or were advised by family member to use herbal medicine.

The high prevalence of use herbal medicine among the pregnant has been reported elsewhere [13, 22-24]. A study conducted in northern Uganda showed the proportion of mothers using herbal medicine was lower [16], but the study was in a rural setting. It is likely that mothers living in an urban setting are of higher socioeconomic status and may be exposed more to advertsiment of herbal medicine use which may influence its use.

Mothers who had attained tertiary education were less likely to use herbal medicine during pregnancy. It has been previously shown that less educated pregnant women are more likely to use herbal medicine [1]. Educated women may be more concerned about the safety of herbal medicines and are likely to adhere to the instructions of health workers against use of herbal medicine [5]. Educated women are less likely to use herbal medicine. Educating the girl child influences the attitude towards health care.

Use of herbal medicine in past pregnancies, and the belief that herbal medicine is safe in pregnancy was associated with its use during pregnancy. This finding was also reported in other studies elsewhere [16, 22, 25]. Using herbal medicine in the previous pregnancy may have given women ressaurance depending on the birth outcomes. Women who were delivering their first or second child were more likely to use herbal medicine while pregnant compared to those of higher parity. This result is similar to findings in an Australian study [26]. Women who were advised by family members to take the herbal medicine were likely to use it during pregnancy. Influence by family members has been found to determine use of complementary medicine [3, 27]. It is likely that mothers of low parity easily take up advice from those with greater experience.

A major limitation of this study is that self-reported data from hospitalised patients was collected and thus response bias cannot be completely ruled out. However, data was collected after delivery which was likely to increase openness in sharing information on herbal medicine use

CONCLUSION

A majority of pregnant women in Kawempe hospital use herbal medicine during pregnancy to treat common complaints and concerns in pregancy. Prior use of herbal medicine and belief that it is safe during pregnancy drives its use in this setting. Further research is needed to document the herbal medicines used, to determine the efficacy of the herbal medicines and assess the potential impact of the herbal medicines on delivery outcomes.

Table 3 Factors associated with use of herbal medicine during pregnancy- bivariate analysis

Participant characteristics	Used herbs 363(69.8%)	Never used herbs 157(30.2%)	BIVARIATE		MULTIVARIATE	
			Unadjusted PR (95%CI)	P value	Adjusted PR (95%CI)	P value
Age						
15-24	169(74.5)	58(25.6)	1.00		1.00	
25-49	193(66.6)	97(33.5)	0.89(0.80,0.99)	0.049	0.98(0.89, 1.10)	0.822
Education level						
No education /Primary	132(73.6)	47(26.4)	0.93(0.70, 1.24)	0.629	1.00	0.669
Secondary	189(70.5)	79(29.4)	0.90(0.68, 1.19)	0.457	0.93(0.85, 1.02)	0.132
Tertiary	41(56.9)	31(43.1)	0.73(0.52, 1.02)	0.063	0.71(0.58, 0.87)	0.001
Parity						
>2	120(62.2)	73(37.8)	1.00		1.00	
≤2	234(75.0)	78(25.0)	1.21(1.1, 1.4)	0.004	1.21(1.07, 1.38)	0.003
Mode of delivery						
Caesarean	101(65.6)	53(34.4)	1.00		1.00	
Normal	250(71.8)	98(28.2)	1.09(0.96, 1.24)	0.191	1.64(1.04, 2.59)	0.033
Advise by family member						
No	8(32.0)	17(68.0)	1.00		1.00	
Yes	355(74.4)	122(25.6)	2.3(1.31, 4.13)	0.004	3.29(2.27, 4.76)	<0.001
Staying with partner						
Yes	315(70.8)	130(29.2)	1.00		1.00	
No	43(66.2)	22(33.9)	0.94(0.78, 1.12)	0.471	1.11(1.00, 1.22)	0.044
Prior use of HM						
No	27(21.4)	99(78.6)			1.00	
Yes	332(85.1)	58(14.9)	4.0(2.84 ,4.6)	<0.001	0.92(0.82, 1.03)	0.145
Herbal medicine is not safe in pregnancy					0.91(0.82, 1.02)	0.104
Agree	150(58.6)	106(41.4)	1.00			
Disagree	197(82.4)	42(17.6)	1.41(1.25, 1.58)	<0.001		
Monthly income						
No income	125(76.2)	39(23.8)	1.00			
≤150000	115(65.7)	60(64.3)	0.86(0.75, 0.98)	0.034		
>150000	123(68.0)	58(32.0)	0.89(0.78, 1.0)	0.088		

ACKNOWLEDGEMENTS

FUNDING DECLARATION

AUTHORS' CONTRIBUTIONS

HI, PN, FN; conceived the idea and collected data. HI drafted the first manuscript and participated in data analysis. FM, participated data analysis and presentation of results. All the authors contributed to the intellectual content,read and approved the final manuscript.

DECLARATION OF CONFLICT OF INTEREST

The Authors declare that there is no conflict of interest.

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