Herbal Medicine Usage among Patients Living with HIV on Antiretroviral Therapy. A Cross-Sectional Study.

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Abstract

Objectives:
We assessed the prevalence and factors associated with herbal medicine use among HIV/AIDs patients enrolled on ART in a rural health care facility in Western Uganda.

Methods:
198 consecutively sampled adult (≥ 18 years) HIV/AIDs patients enrolled on ART in a health facility in Western Uganda were considered. An interviewer-administered questionnaire was used to collect data on herbal medicine use. Data were entered in an Excel spreadsheet and transferred to SPSS *ver* 20.0 for analysis. Continuous variables were analyzed using means and standard deviation. Categorical data were analyzed using chi-square analysis at a 95% level of significance.

Results:
The mean duration of ART use was 7.7 ± 5.2 years. Over half, 57.6% (114/198) of the respondents reported using herbal medicines. The sex of the participants was less likely to result in herbal medicine usage (COR=0.978, 95% CI 0.631-1.517). Furthermore, age was less likely to influence herbal medicine usage (COR=0.640, 95% CI 0.336-1.219). The majority, 62.6% (124/198) of the participants reported having ever missed taking their ART medication. Most of the participants, 85.9% (170/198) had HIV viral load below 1000copies/ml.

Conclusion:
There is a high level of usage of herbal medicine among HIV/AIDs patients enrolled in care in health facilities in Western Uganda.

Recommendation:
Further studies should be conducted to determine the biochemical concentrations and interactions between herbal medicine and ART among people living with HIV.

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1 Introduction

Globally, 38 million people were estimated to be living with HIV/AIDS with over 25.4 million accessing antiretroviral therapy [1]. Africa bears more than half of the global HIV burden with over 54% of the people living with HIV/AIDs yet less than half, 44% of people in Africa are receiving ART [2]. The majority of HIV/AIDs patients in Uganda have high adherence to ART, 75% [1]. However, this is still below the set target of 95% for accelerated HIV control by 2030. Poor adherence is associated with non-suppression of the viral copies, [3]. This is affected by several factors which may include: herbal medicine usage, and social support, among others,

[4]. Effective management of HIV/AIDS is a result of good adherence to antiretroviral medication.

Approximately 80% of people in rural Ugandan settings are estimated to be using herbal medicine, [5]. Among HIV/AIDs patients, previous studies have reported a 63.5% proportion for the use of herbal medicine [6]. This affects adherence to ART and potentially hinders the achievement of a 95% ART adherence level. Furthermore, viral load suppression in western Uganda was noted at 68.0% [7]. This is 27% less than the set 95% target. Poor ART adherence could potentially lead to inadequate viral load suppression with resultant worsening of the disease outcomes among patients [8]. This could further result in increased disease transmission. Western Uganda bears about a 7.9% burden on the overall HIV/AIDs prevalence in the country [7]. However, there is limited information on herbal medicine use among HIV patients which could affect the care for patients in health facilities. This study sought to investigate the extent of herbal medicine use and associated factors among HIV/AIDs patients enrolled on ART in a health facility in southwestern Uganda.

2 Methods

Study design

Cross-sectional design was employed to investigate the magnitude of herbal medicine use and the associated factors among adults≥18 years) living with HIV/AIDs enrolled on ART in a health facility in southwestern Uganda.

Study setting

The study was conducted at the ART clinic at Bukuuku health center IV located in Kabarole District which is about 460 km from Kampala the capital of Uganda. It is bordered by the Districts of Bundibugyo and Ntoroko in the North West, Kasese in the south, Kamwenge, and Kyenjonjo in the east. Bukuuku health center is a government primary health care facility and provides both outpatient and in-patient services. The ART clinic has three operational days that is Monday, Wednesday, and Friday. Monday and Friday are dedicated to adult patients while Wednesday is for Children. The HIV clinic is staffed with two clinicians, two nursing officers, 1 nursing assistant, and one medical social worker. Furthermore, the clinic is staffed with one latency Reversing Agent (LRA), one expert client, one Village Health Team (VHT) coordinator, and three Young Adolescent Support Program personnel. The clinicians and the nurses are responsible for the prescription of the medication. A laboratory the clinic is equipped with viral load and CD4 testing equipment. Data were collected in July and August 2020.

Sample size estimation

The study recruited stable adult study participants above 18 years living with HIV for more than 6 months and had consented to take part in the study. Study participants were consecutively recruited as they came to the clinic for scheduled clinical reviews.

The sample size for the study was estimated using the Kish-Leslie formula [9]. A prevalence of 15.2% extracted from the report about the prevalence of HIV in the Kabarole district was used. [10]. The Z value score was set at 1.96 with a 95% level of significance. The calculated sample size of 198 was used in data collection for the study.

Data collection

All the participants who came to the clinic and met the inclusion criteria were included.

Written informed consent was obtained from potential study participants before the interview.

Data were collected from consenting participants using an interviewer-administered questionnaire.

The questionnaire collected information on social-demographic characteristics (age, sex, marital status, education, and occupation), herbal medicine use, adherence to ART, duration of ART, and viral load test results from the health facility records.

Data management and analysis

Questionnaires were checked and reviewed for completeness at the end of each clinic day.

Quality control during data entry was ensured by the use of the entry screen and validation checks in the Excel Spreadsheet Version 16. Data were then entered into the excel spreadsheets. Cleaning was done and alphanumeric data was converted into numeric data.

Analysis

The cleaned data was then exported to the Statistical Product and Services Solution Version 20, [11]. Categorical variables were analyzed using frequency tables, proportions, and chi-square statistic. The continuous variables were summarized using mean and standard deviation with a 95% confidence interval. We used bivariate logistic regression models were used to assess the association.

Ethical considerations

The research study was reviewed and approved by the Mbarara University of Science and Technology Research and Ethics Committee, (MUREC 1/7). Regulatory clearance from the Uganda National Council of Science and Technology (UNCST) was obtained (RESCLEAR/01).

Permission to conduct the study was obtained from the District Health Officer Kabarole district.

Further approval was obtained from the health facility in charge. The ART clinic in charge of the facility also granted us approval to work with the other clinicians and access the files to obtain the viral load records of the participants interviewed.

3 Results

Approximately 400 patients are enrolled in the ART clinic. 205 study participants were interviewed and 198 individuals met the inclusion criteria. 2 participants were hospitalized and unstable to participate in the study. 5 participants were newly diagnosed and had spent three to five months on ART.

Socio-demographic characteristics

Out of the 198 participants interviewed, 66.2% (131/198) of the participants were females. 58.1% (115/198) of the participants were in the 25-40 age group category with Chi-square value 1.934. 65.2% (129/198) of the study participants had their highest level of education as primary. (Table 1).

Socio-demographic characteristics of the study population

Herbal use, ART adherence, and viral load suppression

The mean duration of ART use was 7.7±5.2. The Majority, 62.6% (124/198) of the participants reported having ever missed taking their antiretroviral medication in the last 3 months. More than half 114 (57.6%) of the participants reported concurrent use of herbal medicine and ART.

Less than a fifth of the participants had non suppressed viral load. (Table 2)

Herbal Use, ART adherence, and Vira load suppression among study participants

Associated factors with herbal medicine usage among people living with HIV on ART

There was no statistically significant association between the social demographic factors and herbal medicine usage among the people living with HIV on ART. The sex of the participants was not assisted with herbal medicine usage 0.978 (COR=0.978, 95% CI 0.631-1.517).

Furthermore, age was also less likely to influence herbal medicine usage (COR=0.640, 95% CI 336-1 219 and Marital status did not influence herbal medicine usage (COR=0 978, 95% 644-1 485 (Table 3

Associated factors with herbal medicine usage among people living with HIV on ART

4 Discussion:

We found a high prevalence of herbal medicine usage among people on ART in a rural health facility. The prevalence of herbal medicine use in patients on ART found in this study (57.6%) is higher than the 33.7% found by Namuddu and others in TASO centers in Uganda [12]. This may be because of the differences in the study setting, our study was conducted in a rural setting while Namuddu and others did theirs in urban settings, and people in rural areas may use herbal medicine more than those in urban settings.

However, the prevalence was similar to the 63.5% found by Langlois-Klassen and others in outpatient clinics in southwestern Uganda [13]. This may be due to similarities in the study settings. Many people believe in the perceived benefit of herbal medicine in alleviating common diseases including HIV. This could also be a result of increasing herbal medicinal concoctions and drugs on the local market by various herbalists. Therefore, greater emphasis should be set to provide guidelines and regulate the use of herbal medicine among the people living with HIV on ART [12].

Several participants reported having missed taking their medication, with the majority having missed in the past 1-3 months. Several factors caused the patients to miss their medication. These included being away from home, forgetfulness, the patient having too many pills to take, the patient being too busy with other things, and the patient feeling overwhelmed taking the drugs. Furthermore, other reasons included; the change in routine by the patient and change in time of taking the medication [10]. These factors could have contributed to the low level of ART adherence causing an increase in the disease burden. The majority of people living with HIV on ART had their viral load counts undetected. However, this rate of viral load suppression

Table 1. Socio-demographic characteristics of the study population

Characteristic	Category	Frequency and proportion (%)	Chi Square (X^2)
Gender	Male	67 (33.8)	1.934
	Female	131 (66.2)	
Age group	18-24	21 (10.6)	0.521
	25-40	115 (58.1)	
	41-59	53 (26.8)	
	>60	9 (4.5)	
Marital Status	Single	26 (13.1)	0.391
	Married	129 (65.2)	
	Divorced	29 (14.6)	
	Widowed	14 (7.1)	
Education	Primary	129 (65.2)	4.526
	Secondary	30 (15.2)	
	Tertiary	3 (1.5)	
	Never	36 (18.2)	
Employment	Employed	84 (42.4)	1.706
	Non-Employed	24 (12.1)	
	Housewife	24 (12.1)	
	Peasant Farmer	66 (33.3)	

Table 2. HerbalUse, ART adherence, and Vira load suppression among study participants

Characteristic	Category	Frequency and Proportion (%)	Chi-Square (X^2)
Ever Missed medication last 3 months	Yes	124 (62.6)	-
	No	74 (37.4)	
Herbal Medicine Use	Yes	114 (57.6)	-
	No	84 (42.2)	
Last time participant missed taking medication	Past 1 week	6 (3.0)	-
	1-2 weeks	7 (3.5)	
	2-4 weeks	16 (8.1)	
	1-3 months	54 (27.3)	
	>3 months	41 (20.7)	
	Never	74 (37.4)	
Viral Load Suppression	Suppressed	170 (85.9)	-
	Non-Suppressed	28 (14.1)	

(85.9%), was lower than the 95% adherence target set by UNAIDS [1].

The viral load suppression was not associated with herbal use among the participants. It should also be noted that the education status in the rural areas is lacking with the majority of the people 65.2% (129/198), having their highest level as primary. However, this wasn't a significant factor in the causation of herbal medicine usage. The improvement of education in this society should be highly considered.

5 Conclusion

Herbal medicine usage remains a rampant behavior among people living with HIV on ART. This could be a contributing factor in the failure to the achievement of the 95% target of adherence. To achieve the promotion of the 95% adherence target, several strong policies should be enacted to regulate

Table 3. Associated factors with herbal medicine usageamong people living with HIV on ART

Characteristic	Category	Herbal medicine usage		Crude OR with CI	P-value
		Yes	**No**		
Sex	Male	80	51	0.978 (0.631-1.517)	0.164
	Female	34	33		
Age Category	18-24	13	8	0.640 (0.336-1.219)	0.914
	25-40	64	51		
	41-59	32	21		
	>60	5	4		
Marital Status	Single	14	12	0.978 (0.644-1.485)	0.942
	Married	74	55		
	Divorced	1	11		
	Widowed	8	6		
Education	Primary	76	53	0.926 (0.759-1.129)	0.210
	Secondary	13	17		
	Tertiary	1	2		
	Never	24	12		
Employment	Employed	49	35	1.004 (0.801-1.258)	0.636
	Non-Employed	12	12		
	House wife	12	12		
	Peasant farmer	41	25		

herbal medicine usage among the people living with HIV on ART.

Recommendation

Comprehensive scientific and laboratory studies need to be conducted to establish the exact relationship and association between herbal medicine usage among people living with HIV on ART. This could be done by measuring the scientific concentrations of the herbal medicine components in the blood and finding out their interaction with the antiretroviral medication.

6 List of abbreviations

HIV**-** Human Immunodeficiency Virus

ART**-** Antiretroviral therapy

AIDS- acquired immunodeficiency syndrome

FIC- Fogarty International Center

SPSS- Statistical Product and Services Solution

PEPFAR- President's Emergency Plan for AIDS Relief

COR**-** Crude Odds Ratio

CI**-** Confidence Interval

Declarations

7 Ethical approval and consent of participants: The study was conducted following the

Declaration of Helsinki. The study received ethics approval from the research ethics committee of Mbarara University of Science and Technology (approval number: MUSTREC #1/7-20) and regulatory clearance from the Uganda National Council of Science and Technology (UNCST) was obtained (RESCLEAR/01). All participants provided voluntary written informed consent at study enrollment.

Study Limitations:

Our findings are limited in that the study was conducted in one health facility hence the results may not be generalized.

Availability of data and materials: The datasets used and/or analyzed during the current study are available from the corresponding author AI on reasonable request.

8 Competing interests:

There are no financial and non-financial competing interests.

Author contribution

AI, AR, ND, AA, BN, contributed towards concept proposal development and manuscript writing.

AI, AR, ND did data collection and manuscript writing.

AI contributed to data analysis and manuscript writing.

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