

Use of Traditional, Complementary and Alternative medicines in people receiving antiretroviral therapy in the Village Clinic in Botswana

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Abstract

In Botswana, the roll-out of free antiretroviral treatment (ART) has led to the possibility of concurrent use of ART with traditional, complementary and alternative medicines (TCAM) among HIV-positive patients. The purpose of this study was to investigate the use of TCAM in patients receiving ART in the village Infectious Diseases Care Clinic (IDCC), located in Gaborone, Botswana. The specific objectives were to determine the prevalence of TCAM and ART concomitant use, describe the most common TCAM products used by these patients; describe the reasons why these patients use TCAM and determine factors associated with the use of TCAM. This was a cross-sectional study in which data was collected from 116 conveniently sampled participants, using a self-administered questionnaire. The prevalence of concurrent use of TCAM and ART was 37.1%. The majority (93%) of participants had used one TCAM product. Most of TCAM products (95.5%) used were taken orally. Respondents said that they used these products to get energy, manage side effects, boost immunity, and manage HIV/AIDS-related psychosocial effects. They did not disclose the use of TCAM to their health care providers (HCPs). The use of TCAM was significantly associated with being employed and having used TCAM before starting ART. In conclusion, 37.1% of participants reported using TCAM and ART concurrently. They did so for various reasons, and most of them did not disclose this to their health care providers. Health care providers need to encourage open, non-judgmental communication about TCAM use and a holistic approach to treatment. Further studies are needed to establish the effects of specific TCAM products of patients' CD4 count, viral load, and other treatment outcomes.

Keywords: Traditional, Complementary and Alternative Medicines (TCAM), Anti-retroviral treatment (ART), Interaction, concomitant use.

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Introduction

The use of traditional, complementary and alternative medicines (TCAM) is practiced worldwide. In Africa, the use of traditional medicines is a common cultural practice. The most common and fastest growing TCAM modality is the use of herbal medicines (Lee et al, 2006). TCAM use in HIV-positive patients may have both beneficial and harmful effects. Some TCAM products have antioxidants and immune boosting effects that help prevent opportunistic infections; while others products have anti-synergic interactions with antiretroviral drugs (ARV) (Mills et al, 2005; Smith et al, 2009; Peltzer et al, 2011). The challenge is that the majority of the TCAM products have not been thoroughly researched thus their composition, therapeutic effects, and interactions with modern drugs are less established (Mills et al, 2005; Tshibangu et al, 2004). Additionally, TCAM are loosely regulated, and it is mistakenly perceived by both health care providers and patients, that they are less harmful (Lee et al, 2006).

The roll-out of antiretroviral treatment (ART) has led to the possibility of concurrent use of ARVs with TCAM. This concurrent use may complicate treatment and lead to treatment failure, drug resistance and possibly exacerbate HIV infection (Peltzer et al, 2008; Mills et al, 2005; Smith et al, 2009; Peltzer et al, 2011). Moreover, clinicians are often unaware of the fact that their patients are using TCAM and what TCAM products are being used (Lamorde et al, 2010; Lee et al, 2006). In most settings, the prevalence of TCAM and ART concurrent use is unknown [8]. The few studies done in some African countries report prevalence figures ranging from 23% in South Africa, 41% in Uganda, to 98.2% in Zimbabwe (Babb et al, 2007; Lubing et al, 2012; Mudzviti et al, 2012). Such high levels of prevalence may mean that interaction between TCAM with antiretroviral drugs may occur and affect treatment outcomes through direct anti-synergic herb-drug interactions and/or through decreased adherence to ART as patients may prefer to take their TCAM instead of antiretroviral drugs (Tshibangu et al, 2004; Lee et al, 2006; Malangu, 2008).

Although it is reasonable to accept that patients in Botswana are advised to avoid TCAM on commencing ART, no study has been conducted to determine the prevalence of TCAM and ART concomitant use or the factors influencing this phenomenon. In conducting this study, it is expected that the findings will help fill this gap in knowledge and assist in generating recommendations for clinical and public health practice. The purpose of this study was to investigate the use of TCAM in patients receiving ART in the village Infectious Diseases Care Clinic (IDCC), located in Gaborone, Botswana. The specific objectives were to determine the prevalence of TCAM and ARV concomitant use, describe the most common TCAM products used by these patients; describe the reasons why these patients use TCAM and determine factors associated with the use of TCAM.

Methods

Study setting

The study was conducted at the village IDCC in Gaborone, Botswana. This clinic, which provides care to HIV-positive patients was opened in 2006. At the time of the study, during the first trimester of 2014, the clinic had about 1400 patients on ART.

Study design and sampling procedure

This was a cross-sectional study of patients on ART who visited the village IDCC in March 2014. The sample size of 116 participants was calculated using Epi-info, based on a population of 1400 patients, an expected frequency reported in the literature of 8.9% (Malangu, 2008) and a worst expected frequency of 3.9%; a 5% precision and a confidence interval of 95% were used to estimate the sample size.

Convenience sampling was used whereby all patients in the waiting area were briefed about the study and requested to consent to participate in the study voluntarily. This process was repeated daily for one week until the estimated sample size was reached. Only patients who consented to participate in the study were given the questionnaires. Patients elected to be given either an English or Setswana version of the self-administered questionnaire. Two research assistants, fluent in both English and Setswana assisted those who requested their help. It should be noted that the questionnaire had been designed for the study based on the objectives of the study. It has been tested in 10 patients in a nearby health facility. The questionnaire included items on socio-demographic details, TCAM products used and their sources, reasons for use, and satisfaction with service at the clinic.

Statistical analysis

Descriptive and inferential statistics were calculated using STATA software version 10.0 (College Station, USA). A bivariate analysis of categorical data was performed by running a two-by-two cross-tabulation. The Odds ratio (OR) and their 95% confidence intervals were calculated; a p-value of ≤ 0.05 was considered statistically significant (Gordis, 2009).

Ethical approval

The study was approved by the Medunsa Research and Ethics Committee (MREC) of the University of Limpopo. Approval was also received from the Botswana Ministry of Health - Health Research Unit. Furthermore, permission to proceed with the study was obtained from the Gaborone district health management team. As explained above, during data collection, informed consent was obtained from each participant enrolled in the study.

Results

Participants' characteristics

Of the 116 study participants, 69.0% were female. Their mean age was 39.4 ± 8.2 years; about 71.5% were between the ages of 30 to 49 years. The majority (56%) of participants were single, but over a third (37.1%) had long-term partners in a marital relationship or simply cohabiting. In term of the educational level, 75.8% of participants had been to secondary school or above. The majority (78.4%) of participants were employed; their mean monthly income was about 400 US dollars. Most of the study participants did not drink alcohol (82.8%) or smoke cigarettes (93.1%). The overwhelming majority of participants (97.4%) had disclosed their HIV status to someone, mainly a family member.

Prevalence of concomitant use, kinds and sources of TCAM products used

The prevalence of concomitant use of TCAM and ART was 37.1% among participants in this study. When asked whether they used TCAM before they were put on ART, 40.5% of participants confirmed that they had used TCAM. The products can broadly be classified into herbal therapies, supplements not provided by the clinic staff members and over-the-counter medicines. As shown in Table 1, the most commonly used were herbal products. Although they could not cite the names of most products used, they mentioned ten products; among them four plants/herbs, three supplements, and three over-the-counter products. The majority of these products (95.5%) were taken orally; while some were used topically or both orally and topically. The majority (93%) of the participants reported using one product. Most of the products were obtained from the open market (36%) and pharmacies (34.0%); while 16.0% and 15.0% of products were obtained respectively from herbal shops and traditional practitioners.

Table 1: TCAM products reported by patients

Products used	Frequency	Percent
Herbs		
Unspecified traditional medicines	11,0	26,8
<i>Moringa oleifera</i> (Moringa)	6,0	14,6
<i>Sutherlandia frutescens</i> (Lerumo la madi)	6,0	14,6
<i>Cassia abbreviata</i> (Monepenepe)	1,0	2,4
<i>Tragia okanyua</i> (Sebabetsane)	1,0	2,4
Supplements		
Immunadue tablets (multivitamin,minerals & proteins)	8,0	19,5
Omega capsules (fish oil with omega 3 & 6)	1,0	2,4
Tre en en capsules (lipids & sterols for healthy cells)	1,0	2,4
OTCs & other medicines		
Activated charcoal	3,0	7,3
Cyproheptadine (Periactin®) tablets	2,0	4,9
Betamethasone cream	1,0	2,4

Reasons and factors for TCAM use

As shown in Figure 1 below, the two most commonly reported reasons for using TCAM were “to get energy” (55.8%), and “to get appetite” (23.3%).

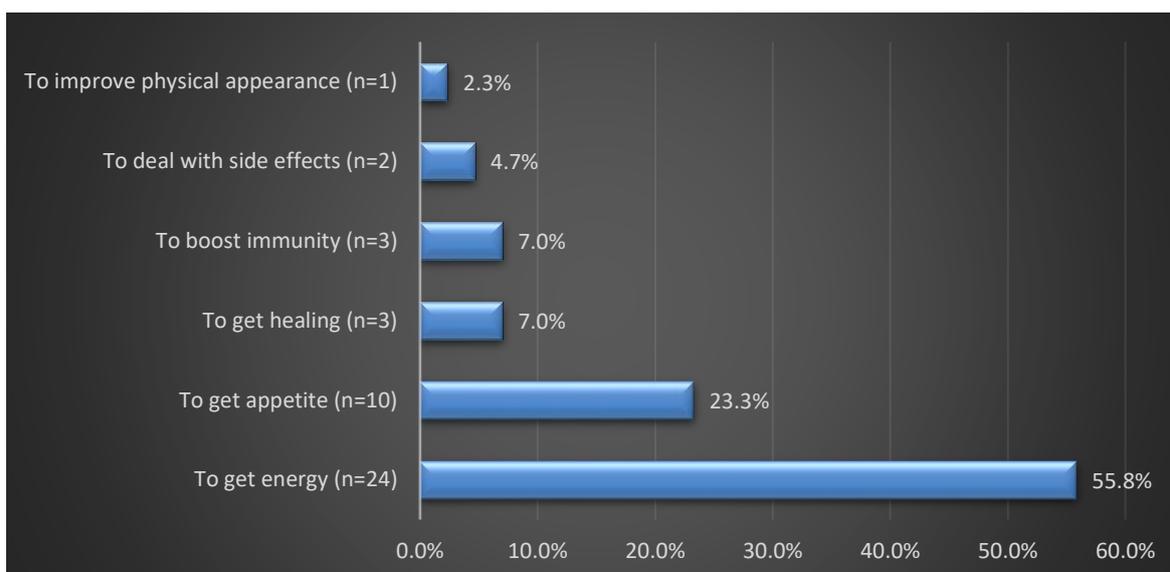


Figure 1: Reasons cited by respondents for using TCAM products (n=43)

In addition, several factors contributed to the use of TCAM among participants as reported below. In terms of knowledge on the effects of TCAM/ARV concomitant use, about a third (31.9%) of the participants stated that they did not know that TCAM may interact with ARVs; this is despite the majority (87.9%) of them having reported that they were counselled about the issue of TCAM use. Of interest, is the fact that 20.7% of participants reckoned that they were informed that TCAM can make ARVs not to work well and that they should avoid using traditional medicines.

Of the 43 participants who used TCAM while on ARVs, 18.6% had disclosed this to their health care providers. The most common reason for disclosing, as reported by 62.5% of participants who did so, was that they wanted to check whether the products they were using interacted with ARVs. On the other hand, of the 35 participants who did not disclose, 40% of them stated that they did not see any need to disclose the use of TCAM to their health care providers; while over a quarter (25.7%) were scared to report this because they knew they had been foretold not to do so (Table 2).

Table 2: Reasons for disclosing and not disclosing the use of TCAM

Aspects assessed	Frequency	Percent
Reasons for telling HCP (n=8)		
Check if TCAM interacted with ART	5	62.5
To get approval from the HCP	2	25.0
To help others as I was selling it	1	12.5
Reasons for not telling HCP (n=35)		
I didn't see any need	14	40,0
I never experienced any side effect	6	17,1
I was told not to use TCAM beforehand	6	17,1
HCP didn't ask	5	14,3
I was scared they will scold me	3	8,6
I was not sure if it is safe to use with ARV	1	2,9

In a bivariate analysis (Table 3), TCAM use was significantly associated with being employed and having used TCAM before starting ART. Participants who were employed were 3.7 times more likely to use TCAM compared to those who were unemployed at the time of the study (OR=3.7 [1.16-11.8], p=0.02). The association with employment status remained even after controlling for level of education and age.

Table 3: Factors associated with TCAM use

Variables	TCAM use	OR (95% CI)	P-value
Age categories			
≤39 years old	18 (15.9%)	1.0	
40 + years old	25 (22.1%)	0.48 (0.22-1.04)	0.06
Educational level			
< Secondary	11 (9.7%)	1.0	
Secondary +	32 (28.3%)	1.51 (0.61-3.75)	0.38
Employment			
No	127 (74.3)	1.0	
Yes	44 (25.7%)	3.9 (1.23-13.35)	0.02
Income level			
≤P 4155	20 (17.7%)	1.0	
P 4156 +	11 (97.7%)	1.3 (0.48-3.5)	0.06
Religion			
Christians	38 (33.6%)	2.07 (0.70-6.19)	0.19
Non-Christian	5 (4.4%)	1.0	
Satisfaction with services			
Not satisfied	3 (2.7%)	1.0	
Satisfied	40 (35.4%)	0.39 (0.06-2.45)	0.39

Discussion

It is noteworthy that the majority (69%) of participants in the study were female aged 30 to 49 years old. This is reflective of the HIV situation and healthcare utilization in the country (Gill et al, 2015; Satti et al, 2012; Mills et al, 2005). In line with the purpose of the study, concurrent use of TCAM and ARV was reported by 37.1% of participants. This figure is similar to what has been reported by other researchers in South Africa and Uganda; the figures reported ranged from 23% to 46% (Babb et al, 2007; Lubinga et al, 2012). However, the figure found in this study is much lower than the prevalence of 98% that was reported by a study in Zimbabwe (Mudzviti et al, 2012). This difference may be due to the exclusion of supplements, mainly micronutrients and multivitamins because these were provided by the attending healthcare workers as well.

In this study, participants used herbs, supplements, some other non-prescribed medicines, and OTCs. In line with reports by other investigators, herbal medicines were the most commonly used form of TCAM, probably due to their easy availability and the perception that natural products are less harmful [Lee et al, 2006; Mills et al, 2005; Babb et al, 2007; Langlois-Klassen et al, 2007). Of the supplements and immune boosting products reportedly used by participants in this study, some products like *Sutherlandia frutescens* have proven

immunity boosting and antioxidant effects (Mills et al, 2005; Tobwala et al, 2014). However, the use of herbal mixtures of unknown composition and unproven safety and efficacy remain a concern because of the potential of anti-synergistic herb-drug interactions and negative effect on adherence to ART regimens (Hu et al, 2005). In this study, the use of activated charcoal illustrates well the concern as it can adsorb the ARVs, prevent absorption and consequently lead to insufficient therapeutic levels and even to drug resistance (Chinsembu and Hedimbi, 2010; Lee et al, 2005).

The sources of the TCAM products used by the participants add to the above concern. The products used were obtained from the open market, pharmacies, herbal shops, and traditional practitioners. Apart from pharmacies, most of the other outlets do not have trained appropriate storage conditions and even people who can offer credible advice, information or counseling (Malangu and Ogunbanjo, 2006; Farrell et al, 2008). Moreover, as reported by Peltzer and colleagues (2011), even when products are obtained from pharmacies, it is usually over-the-counter (OTCs) medicines that are bought without interaction with a pharmacist who could provide professional advice. The absence of professional help, lack of adequate knowledge and several other factors contribute to the concurrent use of TCAM and ARV. In this study, although the majority of participants reported having been counseled about the use of TCAM, only a third of them knew that it might interact negatively with ARVs. This finding is consistent with what has been reported by other investigators from diverse settings (Hernandez et al, 2009; Langlois-Klassen et al, 2007).

As reported by other researchers, the majority of the participants using TCAM in this study did not disclose this to their HCPs as they did not see any need to do so (Peltzer et al, 2008; Malangu, 2008). Moreover, other investigators have indicated that the reason why patients do not report the use of TCAM is that clinicians do not ask them about TCAM use (Puoane et al, 2012; Peltzer et al, 2010). In this study, because patients reckoned that they had been specifically counselled to avoid traditional medicines, their non-disclosure maybe a way not to offend their attending HCPs as it has also been reported by other authors (Applebaum et al, 2015; Seung-Min et al, 2013; Namuddu et al, 2013). Although it is unclear whether respondents had challenges getting non-ARV medications; this could be one the reasons why patients had to look for OTCs and other medicines they deemed necessary to alleviate symptoms of the disease or relieve some discomfort associated with ART (Anderson et al, 2008; Farrell et al, 2008). Clearly, it is important that clinicians should find out from their patients about ailments and other discomforts for which non-ARV medicines could be prescribed for (Langlois-Klassen et al, 2007; Nagata et al, 2011). Hence, clinicians should consider a holistic and multi-professional approach whereby safe TCAM products and other specialists such as psychiatrists and clinical psychologists are encouraged to address the psychosocial effects of HIV and ART (Nagata et al, 2011; Littlewood and Venable, 2008; Mudzviti et al, 2006).

It is interesting to note that some of the reasons participants cited for using TCAM were psychosocial such as to get energy and to look good. These needs should not be ignored because ARVs do not cure HIV or address emotional distress automatically (Robinson and

McGrail, 2004; Bishop et al, 2008; Do et al, 2010). The other reasons mentioned for using TCAM in this study are similar to what has been reported by several other investigators; namely to manage side effects and to get appetite (Mills et al, 2005; Peltzer et al, 2011). This finding also suggests that patients may have been not told what to do in order to prevent, minimize, relieve or manage side effects. Although, age, gender and education level did not show any association with TCAM use in this study; being employed was significantly associated with TCAM use. This finding suggests that affordability is an important factor in facilitating the use of TCAM. This finding concurs with reports by other researchers (Busse et al, 2005; Hsiao et al, 2003; Broom et al, 201; Muhamadi et al, 2011; Chinsebu and Hedimbi, 2010; Cheung et al, 2007; Lorenc and Robinson 2013).

The above findings must be interpreted taking into consideration the limitations inherent to the design of this study. Firstly, as a cross-sectional study, it does not warrant the possibility of establishing temporal causal relationships. Secondly, because the study was based on self-report by participants, there is a possibility that social desirability may have influenced the way participants answered some questions on TCAM use; finally, since some questions were about past events, the responses given by participants were subject to a recall bias (Krumpal, 2013). Despite, these limitations the study assisted in establishing the situation of concurrent use of TCAM with ART among respondents.

Conclusions

In conclusion, 37.1% of participants reported using TCAM and ART concurrently. They did so for various reasons, and most of them did not disclose this to their health care providers. Health care providers need to encourage open, non-judgmental communication about TCAM use and a holistic approach to treatment. Further studies are needed to establish the effects of specific TCAM products of patients' CD4 count, viral load, and other treatment outcomes.

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