

# Knowledge, Attitudes and Practices Toward Traditional and Complementary Medicine Among Nurses and Midwives in North-Western Uganda

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## Abstract

**Background:** Traditional and complementary medicine is globally accepted and steadily gaining popularity among populations. The practices of conventional health care workers toward it vary from one country or setting to another. Limited literature exists on practices of health workers towards this form of medicine in low income settings especially in Africa where it is widely used with limited collaboration, integration and regulation.

**Purpose:** To determine the prevalence and determinants of traditional and complementary medicine practices as well as health problems and reasons for its use among nurses and midwives in North Western Uganda.

**Materials & Methods:** We used a descriptive and analytical cross-sectional design. Data was collected using self-administered structured questionnaires that were distributed to a sample of 300 nurses and midwives drawn from 6 hospitals. Descriptive statistics, chi squared and multiple binary logistic regression analysis were used for analysis.

**Results:** Of all the respondents, 147 (54.9%) had personally ever used traditional and complementary medicine, 69 (25.7%) had personally used it in the past 12 months, 84 (31.3%) had ever recommended use of TCM. The most commonly used therapies were: herbalism (78.2%), traditional birth attendance (67.3%), nutritional supplements (67.3%), body massage (53.1%), spiritualism (24.5%), traditional dentistry (21.1%) and traditional bone setting (14.3%). Traditional and complementary medicine was mainly used for pain management (53.1%) followed by acute diseases (49.6%). The commonest reasons given for use were the fact that it is readily available, accessible and cheap. Chi square analysis showed statistically significant associations between TCM practices (personal use and recommendation to others) and respondents religion ( $p=0.046$ ), location of hospital ( $p=0.002$ ), presence of a family member who is a TCM provider ( $p=0.001$ ), attendance of training on TCM in the years of work ( $p=0.001$ ), provision of TCM as a business and duration of years served as a health professional ( $p=0.029$ ).

**Conclusions:** There is need to improve traditional and complementary medicine practices amongst nurses, midwives and other health care professionals. This will avert the negative/undesired effects in the community.

**Keywords:** traditional and complementary medicine (TCM), practices, knowledge, attitudes, conventional health workers

## 1. Introduction

### 1.1 Background of the Study

Traditional and complementary medicine (TCM) also known in the developed countries as complementary and alternative medicine (CAM) is globally accepted as an alternative form of medical practice and is utilized in almost every country (WHO, 2013). According to the WHO, over 100 million Europeans are currently TCM/CAM users and many Asian countries such as Singapore (76% users) and Republic of Korea (86% users) continue to use TCM despite allopathic medicine being readily available. Furthermore, 84% of Japanese physicians use kampo (traditional Japanese medicine) in their daily practice and in China, TCM accounts for

around 40% of all health care delivered and is used to treat roughly 200 million patients annually (WHO, 2013). In Africa up to 80% populations use TCM for their primary health care (PHC) needs (WHO, 2002) while in Uganda, over 60% of the population utilizes TCM as its primary health care (MoH Uganda, 1999).

Studies show that the practices of conventional health care workers toward TCM vary from one country or setting to another (Stangeet al., 2008; Chang et al., 2011; Johnson et al., 2012; Adib-Hajbaghery & Hoseinian, 2014). For instance, the Johnson et al. (2012) study on personal use of CAM among United States (US) health care workers found that 76% of them had at least personally used a CAM therapy in the past one year compared with 63% of the general population. The commonly used therapies were: diets, multivitamins and minerals, herbal supplements, mind – body therapies and manipulative therapies. The most common reason given for CAM use in the US study was for general wellness (67.8%) and the least common was that western medicine (WM) is too expensive (3.9%). Back, neck or joints pains were the commonly reported health conditions for use. On the other hand, Adib-Hajbaghery & Hoseinian (2014) in their study among Kashan health care staff in Iran found that, 57.6% had personally used TCM although 88.4% of them had no previous training in TCM. The commonly used therapies in the Iranian study were herbalism, cupping and traditional bathing. Health problems for use were mainly digestive diseases, colds, migraine and head aches, skin disorders and diabetes. More than half (56%) had also recommended TCM use to others.

Personal use of TCM/CAM by health workers has been shown to be related to the provision of, referral for and attitudes they have towards the integration of CAM therapies in health care practices (Tracy et al., 2005; Chang et al., 2011; Kemper et al., 2011; Zoe et al., 2014). Other factors associated with increased CAM use are: female gender, younger age, higher educational background, higher annual household income, possession of private health insurance and being a non-Christian (Chang et al., 2011, Shorofi & Arbon, 2010). With the increasing popularity and use of TCM, nurses, midwives and conventional health care workers have a big role in educating patients and sensitizing communities on the safe and appropriate use as well as side effects of TCM therapies. Nurses and midwives are particularly important in this subject because they play key roles in patient care and information management (Hjelm & Atwine, 2011; Muñoz-Sellés et al., 2013) and are the cornerstone of healthcare systems (Shorofi & Arbon, 2010). The prevalence and determinants of their practices therefore need to be known so that appropriate interventions to improve those practices can be instituted for their own benefit and for the benefit of their patients.

In Uganda, studies show that use of TCM is common especially in chronic diseases (Hjelm & Atwine, 2011; Nuwaha & Musunguzi, 2013; Kaadaaga et al., 2014). Some studies in the country have also shown that there is limited health provider – patient communication on the use of TCM despite occurrence of herb toxicities among some of the TCM users (Auerbach et al., 2012; Langlois-Klassen et al., 2008). Common therapies used and the reasons for their use have been explored among the general population and patient groups by the mentioned studies. The prevalence and determinants of TCM practices among health care workers in the country, to the best of our knowledge, however, have not been explored. In addition, limited literature exists on the practices towards TCM among health care professionals in low income settings especially in Africa where TCM is widely used with limited collaboration, integration and regulation. The aim of this study was therefore to establish the prevalence and determinants of TCM practices among nurses and midwives in North Western Uganda. The study also aimed to describe the common TCM therapies used and the common health problems and reasons for TCM use among nurses and midwives in the region.

### *1.2 Research Questions*

The study had the following research questions;

- i.** What were the Socio-demographic and Knowledge Determinants of TCM among Nurses and Midwives?
- ii.** What was the knowledge of Nurses and Midwives on TCM in North Western Uganda?
- iii.** What were the Attitudes of Nurses and Midwives in North Western Uganda toward TCM?
- iv.** What were the practices of Nurses and Midwives toward TCM in North Western Uganda?
- v.** Was there any relationship between recommendation of TCM Use and communication on TCM among nurses and midwives in North Western Uganda?

## **2. Materials & Methods**

### *2.1 Study Design, Area and Population*

This descriptive and analytical cross-sectional study was carried out in North Western region of Uganda in the period of August – October 2015. The region is about 500 km from the capital city, Kampala and has 8 districts

with a total of 10 hospitals; 5 of which are public and 5 are private-not-for-profit (PNFP). There was no established private-for-profit hospital in the region by the time of this study. The survey was conducted among 300 nurses and midwives from 6 of the hospitals namely; Arua Regional Referral Hospital (public and urban), Yumbe Hospital (public & rural), Moyo and Nebbi Hospitals (public & urban), Maracha Hospital (PNFP & rural) and Kuluva Hospital (PNFP & peri-urban). These hospitals were selected for both representativeness and convenience.

### 2.2 Eligibility

Nurses and midwives in the 6 selected hospitals who were available for duty and consented to participate and in addition, had worked for at least 6 months (in public or private facility) following their basic professional qualification were allowed to participate. A short working duration was considered to have limited influence on their TCM practices, hence the at least 6 months working requirement was a pre-requisite for recruitment into the study.

### 2.3 Sample Size and Data Collection

Sample size was calculated using Cochran’s formula (Cochrane, 1963). Considering a 95% confidence interval,  $Z = 1.96$  and assuming  $p = 0.5$  (maximum variability) and  $e = \pm 5\%$  precision, the resulting sample of 384 was then adjusted using Cochran’s correction formula for smaller populations to arrive at a required sample of 250. An additional 20% (50) was added for non-response and incomplete responses, thus the total sample size was 300.

Data was collected using well designed and pretested self-administered structured questionnaires. The questionnaire had a total of 31 questions 12 of which were on socio-demographic variables, 15 were on practices, 3 were on knowledge and 1 (with subsections) was on attitudes. The questionnaires were distributed by 6 research assistants who were trained prior to data collection. Written consent was obtained from each respondent before administering the questionnaire.

### 2.4 Data Analysis

Microsoft Office Excel sheets were used to code the data and thereafter Statistical Package for Social Scientists (SPSS) version 21 was used for the analysis. We used descriptive statistics, chi square and multiple binary logistic regression to analyse the study variables. In all analyses, a p- value of less than 0.05 was considered statistically significant. Dataset related to this study has been deposited and published in Mendeley data repository (Omona & Yayi, 2021) in line with the global policy on fair data sharing.

### 2.5 Ethical Approval

Hanyang University Institutional Review Board provided the ethical approval for this study.

## 3. Results

### 3.1 Survey Response Rate

From a total of 300 questionnaires distributed, 296 were returned giving a response rate of 98.7%. Data from 268 questionnaires was analysed after those with partial or incomplete responses were discarded.

### 3.2 Socio-demographic Characteristics of Respondents

The average age of the respondents was 35.8 years and the range was from 20 to 66 years. Their mean duration of service as health professionals was 11.5 years with a range of 1 to 38 years. There were more females (78.4%) compared to males (21.6%) and nurses (64.6%) compared to midwives (35.4%).

### 3.3 Socio-demographic and Knowledge Determinants of TCM Among Nurses and Midwives

Table 1 shows the details of the socio-demographic characteristics and knowledge (training) variables by TCM practices of the respondents.

Table 1. Socio-demographic, knowledge (training) variables and TCM practices of respondents

Socio-demographic & knowledge variables	Total, N=268 (n, %)	Personal use of TCM, n(%)		Recommendation of TCM, n(%)		p-value ( $X^2$ )
		User	Non user	Yes	No	
Age (years)						

▪ 29 and below	84 (31.3)	42 (28.6)	42 (34.7)	0.531	22 (26.2)	62 (33.7)	0.382
▪ 30 - 39	86 (32.1)	48 (32.7)	38 (31.4)		31 (36.9)	55 (29.9)	
▪ 40 and above	98 (36.6)	57 (38.8)	41 (33.9)		31 (36.9)	67 (36.4)	
<b>Gender</b>							
▪ Male	58 (21.6)	38 (25.9)	20 (16.5)	0.065	19 (22.6)	39 (21.2)	0.793
▪ Female	210 (78.4)	109 (74.1)	101 (83.5)		65 (77.4)	145 (78.8)	
<b>Marital status</b>							
▪ Married	179 (66.8)	92 (62.6)	87 (71.9)	0.367	14 (16.7)	32 (17.4)	0.884
▪ Others	89 (33.2)	55 (37.4)	34 (28.1)		70 (83.3)	152 (82.6)	
<b>Cadre</b>							
▪ Nurse	173 (64.6)	95 (64.6)	78 (64.5)	0.978	57 (67.9)	116 (63.0)	0.445
▪ Midwife	95 (35.4)	52 (35.4)	43 (35.5)		27 (32.1)	68 (37.0)	
<b>Level of qualification</b>							
▪ Basic certificate	141 (52.6)	74 (50.3)	67 (55.4)	0.412	40 (47.6)	101 (54.9)	0.269
▪ Diploma & higher	127 (47.4)	73 (49.7)	54 (44.6)		44 (52.4)	83 (45.1)	
<b>Ownership of the school(s) of training</b>							
▪ Public/government training school(s)	142 (53.0)	76 (51.7)	66 (54.5)	0.894	44 (52.4)	98 (53.3)	0.557
▪ Private training school(s)	83 (31.0)	47 (32.0)	36 (29.8)		29 (34.5)	54 (29.3)	
▪ Both Public and Private training schools	43 (16.0)	24 (16.3)	19 (15.7)		11 (13.1)	32 (17.4)	
<b>Religion</b>							
▪ Catholic	129 (48.1)	75 (51.0)	54 (44.6)	<b>0.046*</b>	45 (53.6)	84 (45.7)	0.269
▪ Anglican	102 (38.1)	47 (32.0)	55 (45.5)		26 (31.0)	76 (41.3)	
▪ Others	37 (13.8)	25 (17.0)	12 (9.9)		13 (15.5)	24 (13.0)	
<b>Ownership of hospital where you currently work</b>							
▪ Public/government	220 (82.1)	116 (78.9)	104 (86.0)	0.135	64 (76.2)	156 (84.8)	0.089
▪ Private not for profit	48 (17.9)	31 (21.1)	17 (14.0)		20 (23.8)	28 (15.2)	
<b>Location of the hospital where you currently work</b>							
▪ Urban	185 (69.0)	90 (61.2)	95 (78.5)	<b>0.002*</b>	48 (57.1)	137 (74.5)	<b>0.004*</b>
▪ Rural	83 (31.0)	57 (38.8)	26 (21.5)		36 (42.9)	47 (25.5)	
<b>Duration of service (years)</b>							
▪ Less than 5	80 (29.9)	39 (26.5)	41 (33.9)	0.419	17 (20.2)	63 (34.2)	<b>0.006*</b>

▪ 5 - 10	60 (22.4)	35 (23.8)	25 (20.7)		28 (33.3)	32 (17.4)	
▪ More than 10	128 (47.8)	73 (49.7)	55 (45.5)		39 (46.4)	89 (48.4)	
<b>Family member is a TCM provider</b>							
▪ Yes	52 (19.4)	44 (29.9)	8 (6.6)	<0.001*	30 (35.7)	22 (12.0)	<0.001*
▪ No	216 (80.6)	103 (70.1)	113 (93.4)		54 (64.3)	162 (88.0)	
<b>Provision of TCM as a business</b>							
▪ Yes	16 (6.0)	13 (8.8)	3 (2.5)	0.029*	15 (17.9)	1 (0.5)	<0.001*
▪ No	252 (94.0)	134 (91.2)	118 (97.5)		69 (82.1)	183 (99.5)	
<b>Total monthly income in Uganda shillings</b>							
▪ less than 600,000	179 (66.8)	98 (66.7)	81 (66.9)	0.962	60 (71.4)	119 (64.7)	0.276
▪ 600,000 or more	89 (33.2)	49 (33.3)	40 (33.1)		24 (28.6)	65 (35.3)	
<b>Attendance of training or CME on TCM during years worked</b>							
▪ Yes	49 (18.3)	40 (27.2)	9 (7.4)	<0.001*	26 (31.0)	23 (12.5)	<0.001*
▪ No	219 (81.7)	107 (72.8)	112 (92.6)		58 (69.0)	161 (87.5)	

Chi square analysis showed statistically significant associations ( $p$ -values < 0.05) between TCM practices (personal use and recommendation to others) and respondents religion ( $p=0.046$ ), location of hospital ( $p=0.002$ ), presence of a family member who is a TCM provider ( $p=0.001$ ), attendance of training or CME on TCM in the years of work ( $p=0.001$ ), provision of TCM as a business and duration of years served as a health professional ( $p=0.029$ ). The rest of the socio-demographic variables did not have any statistically significant associations with TCM practices (Table 1).

### 3.4 Knowledge of Nurses and Midwives on TCM

Attendance of any training/continuing medical education (CME) in the years of their clinical practice was used as a proxy indicator of evidence based knowledge on TCM therapies. It was found that 49 (18.3%) of the respondents had ever attended training/CME on TCM while 219 (81.7%) had never attended any. Chi squared analysis revealed strong statistically significant associations between attendance of any training/CME on TCM in years of service and both personal use of TCM ( $p<0.001$ ) and recommendation of TCM to others ( $p=0.008$ ) (Table 1).

### 3.5 Attitudes of Nurses and Midwives Toward TCM

The attitudes of respondents towards TCM were assessed on the basis of their level of agreement with 8 attitudinal statements that were placed on a 5 unit Likert scale. Chi squared analysis was then used to compare their responses with TCM practices such as personal use of TCM and recommendation of TCM to others. It was found that respondents' levels of agreement with all the attitudinal statements had statistically significant relationships with their TCM practices (Table 2).

Table 2. Respondents' attitudes toward TCM and their TCM practices

Variables	Personal use of TCM, n(%)		$p$ -value ( $X^2$ )	Recommendation of TCM, n(%)		$p$ -value ( $X^2$ )
	User	Non user		Yes	No	
<b>TCM therapies &amp; practices are beneficial in prevention and management of some diseases.</b>						
▪ Strongly agree	34 (23.1)	7 (5.8)	<0.001*	24 (28.6)	17 (9.2)	<0.001*
▪ Agree	85 (57.8)	65 (53.7)		47 (56.0)	103 (56.0)	

▪ Undecided	10 (6.8)	12 (9.9)		6 (7.1)	16 (8.7)	
▪ Disagree	11 (7.5)	25 (20.7)		4 (4.8)	32 (17.4)	
▪ Strongly Disagree	7 (4.8)	12 (9.9)		3 (3.6)	16 (8.7)	
<b>Respondent would provide TCM if given an opportunity to do so.</b>						
▪ Strongly agree	12 (8.2)	4 (3.3)	<b>0.018*</b>	9 (10.7)	7 (3.8)	<b>&lt;0.001*</b>
▪ Agree	48 (32.7)	28 (23.1)		36 (42.9)	40 (21.7)	
▪ Undecided	34 (23.1)	21 (17.4)		20 (23.8)	35 (19.0)	
▪ Disagree	33 (22.4)	40 (33.1)		15 (17.9)	58 (31.5)	
▪ Strongly Disagree	20 (13.6)	28 (23.1)		4 (4.8)	44 (23.9)	
<b>Respondent would like to attend some courses, trainings or CME on TCM.</b>						
▪ Strongly agree	58 (39.5)	29 (24.0)	<b>0.020*</b>	39 (46.4)	48 (26.1)	<b>0.010*</b>
▪ Agree	67 (45.6)	56 (46.3)		35 (41.7)	88 (47.8)	
▪ Undecided	6 (4.1)	10 (8.3)		3 (3.6)	13 (7.1)	
▪ Disagree	5 (3.4)	8 (6.6)		2 (2.4)	11 (6.0)	
▪ Strongly Disagree	11 (7.5)	18 (14.9)		5 (6.0)	24 (13.0)	
<b>Some TCM therapies work better than modern medicines.</b>						
▪ Strongly agree	26 (17.7)	4 (3.3)	<b>&lt;0.001*</b>	19 (22.6)	11 (6.0)	<b>&lt;0.001*</b>
▪ Agree	56 (38.1)	28 (23.1)		36 (42.9)	48 (26.1)	
▪ Undecided	20 (13.6)	29 (24.0)		13 (15.5)	36 (19.6)	
▪ Disagree	23 (15.6)	31 (25.6)		9 (10.7)	45 (24.5)	
▪ Strongly Disagree	22 (15.0)	29 (24.0)		7 (8.3)	44 (23.9)	
<b>Modern medicine providers should collaborate on best patient care options with TCM providers.</b>						
▪ Strongly agree	30 (20.4)	10 (8.3)	<b>0.002*</b>	22 (26.2)	18 (9.8)	<b>0.002*</b>
▪ Agree	76 (51.7)	51 (42.1)		40 (47.6)	87 (47.3)	
▪ Undecided	11 (7.5)	20 (16.5)		5 (6.0)	26 (14.1)	
▪ Disagree	17 (11.6)	23 (19.0)		12 (14.3)	28 (15.2)	
▪ Strongly Disagree	13 (8.8)	17 (14.0)		5 (6.0)	25 (13.6)	
<b>TCM should be integrated into formal health care practice to enable holistic care.</b>						
▪ Strongly agree	26 (17.7)	11 (9.1)	<b>0.032*</b>	18 (21.4)	19 (10.3)	<b>0.034*</b>
▪ Agree	76 (51.7)	55 (45.5)		41 (48.8)	90 (48.9)	
▪ Undecided	25 (17.0)	22 (18.2)		16 (19.0)	31 (16.8)	
▪ Disagree	8 (5.4)	15 (12.4)		4 (4.8)	19 (10.3)	
▪ Strongly Disagree	12 (8.2)	18 (14.9)		5 (6.0)	25 (13.6)	
<b>The regulation of TCM practice in Uganda needs to be strengthened.</b>						
▪ Strongly agree	34 (23.1)	16 (13.2)	0.050	22 (26.2)	28 (15.2)	0.037
▪ Agree	64 (43.5)	46 (38.0)		38 (45.2)	72 (39.1)	
▪ Undecided	24 (16.3)	25 (20.7)		14 (16.7)	35 (19.0)	
▪ Disagree	12 (8.2)	21 (17.4)		5 (6.0)	28 (15.2)	
▪ Strongly Disagree	13 (8.8)	13 (10.7)		5 (6.0)	21 (11.4)	
<b>A course on TCM should be included in the training curricula of all medical professionals.</b>						

▪ Strongly agree	27 (18.4)	10 (8.3)	<b>0.029*</b>	18 (21.4)	19 (10.3)	<b>0.012*</b>
▪ Agree	58 (39.5)	38 (31.4)		36 (42.9)	60 (32.6)	
▪ Undecided	26 (17.7)	27 (22.3)		14 (16.7)	39 (21.2)	
▪ Disagree	18 (12.2)	24 (19.8)		8 (9.5)	34 (18.5)	
▪ Strongly Disagree	18 (12.2)	22 (18.2)		8 (9.5)	32 (17.4)	

### 3.6 Practices of Nurses and Midwives Toward TCM

#### a) Personal use of TCM

Results showed that 147 (54.9%) of the respondents had personally ever used TCM while 121 (45.1%) had never used it. Of the respondents who had ever personally used TCM (n=147), 69 (46.9%) (which is 25.7% of all respondents) had used it in the past 12 months while 78 (53.1%) had not.

#### TCM therapies ever personally used and those used in the past 12 months

The most commonly ever used therapies were the traditional medicine therapies namely; herbalism (78.2%), traditional birth attendance (67.3%), spiritualism (24.5%), traditional dentistry (21.1%) and traditional bone setting (14.3%) with exception of nutritional supplements (67.3%) and body massage (53.1%). The least used ones were those in the complementary medicine category such as chiropractic (4.1%), ayurvedic medicine (6.8%) and acupuncture (6.8%). Meanwhile, therapies most commonly used in the past 12 months were herbs (66.7%) followed by nutritional supplements (56.5%) and body massage (42.0%). The least used therapies were homeopathy (2.9%), chiropractic (4.3%) and acupuncture (5.8%) (Table 3).

Table 3. TCM therapies ever personally used and those used in the past 12 months by the respondents

TCM therapy used	TCM therapies personally ever used, N = 147		TCM therapies used in the past 12 months, N = 69	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
▪ Herbalism (use of herbs)	115	78.2	46	66.7
▪ Nutritional supplements	99	67.3	39	56.5
▪ Body massage	78	53.1	29	42.0
▪ Traditional birth attendance	48	32.7	12	17.4
▪ Spiritualism (consulting spirits)	36	24.5	7	10.1
▪ Traditional dentistry	31	21.1	14	20.3
▪ Traditional bone-setting	21	14.3	8	11.6
▪ Bio-disc	17	11.6	8	11.6
▪ Reflexology	14	9.5	9	13.0
▪ Hydro-therapy	11	7.5	6	8.7
▪ Yoga (meditation)	11	7.5	5	7.2
▪ Homeopathy	11	7.5	2	2.9
▪ Acupuncture	10	6.8	4	5.8
▪ Ayurvedic medicine	10	6.8	3	4.3
▪ Chiropractic medicine	6	4.1	3	4.3

**Sources of obtaining TCM therapies ever used**

Respondents who had personally ever used TCM (n=147) more commonly obtained TCM therapies from relatives (32.1%, n=86) and friends (27.2%, n=73) than from TCM providers (21.6%, n=58), western medicine providers (7.1%, n=19) and other sources (0.4%, n=1) (Table 4).

Table 4. Sources of obtaining TCM therapies ever used

<i>Sources of TCM</i>	<i>Frequency (n)</i>	<i>Percentage (%)</i>
▪ Relatives	86	32.1
▪ Friends	73	27.2
▪ TCM provider	58	21.6
▪ Personal sources	33	12.3
▪ Western Medicine provider	19	7.1
▪ Others...	1	0.4

*Note: Some respondents had multiple responses.*

**Personal health problems for use of TCM**

Respondents who had personally ever used TCM (n=147) used TCM therapies for pain management (53.1%, n=78) followed by acute diseases (49.6%, n=73). Psychiatric conditions (10.2%, n=15) and others such as dental caries, fresh wounds, skin infections, infertility, dislocation, measles and tooth extraction (11.6%, n=17) were the least health problems for personal use of TCM (Figure 1).

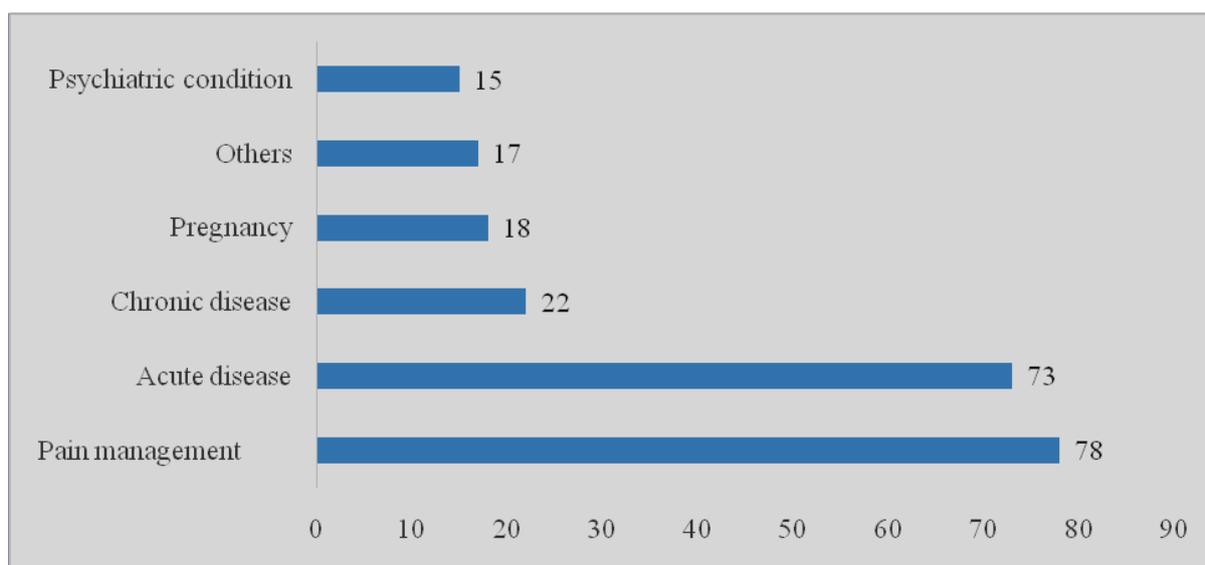


Figure 1. Personal health problems for use of TCM

**Reasons for personal use of TCM**

The commonest reason given for use of TCM was the fact that it was readily available, accessible and cheap (42.2%, n=62), followed by the fact that modern medicine did not help (40.8%, n=60). The other less common reasons given were that : TCM is natural and therefore has fewer side effects (34.0%, n=50); I believed TCM works better for my condition (26.5%, n=39); Modern medicine is expensive(18.4%, n=27) and others such as back up treatment, payment after healing, TCM drugs act fast, influence of friends, parent’s decision and being advised to use it (8.8%, n=13) (Table 5).

Table 5. Reasons for personal use of TCM

Reasons for personal use	Frequency (n)	Percentage (%)
▪ TCM is readily available, accessible and cheap	62	42.2
▪ Modern medicine did not help	60	40.8
▪ TCM is natural and therefore has fewer side effects	50	34.0
▪ I believed TCM works better for my condition	39	26.5
▪ Modern medicine is expensive	27	18.4
▪ Others...	13	8.8

*Total percentages are more than 100 because this was a multiple choice question.*

#### ***b) Recommendation of TCM to anybody***

When asked whether respondents had ever recommended use of TCM to anybody, it was found that 84 (31.3%) of all respondents had ever recommended TCM to anybody while 184 (68.7%) had not.

#### ***Reasons for recommendation of TCM to anybody***

The commonest reason for recommendation of TCM to anybody was that TCM is readily available, accessible and cheap (47.6%, n=40), followed by the fact that modern medicine did not help (46.4%, n=39). The other less common reasons given were that: TCM is natural and therefore has fewer side effects (39.3%, n=33); I believed TCM works better for my condition (35.7%, n=30); Modern medicine is expensive (21.4%, n=18) and others such as: TCM drugs are fast acting, TCM has health benefits, has no side effects and it had helped me (7.1%, n=6) (Table 6).

Table 6. Reasons for recommendation of TCM to anybody

Reasons for recommending TCM	Frequency (n)	Percentage (%)
▪ TCM is readily available, accessible and cheap	40	47.6
▪ Modern medicine did not help	39	46.4
▪ TCM is natural and therefore has fewer side effects	33	39.3
▪ I believed TCM works better for my condition	30	35.7
▪ Modern medicine is expensive	18	21.4
▪ Others...	6	7.1

*Total percentages are more than 100 because some respondents had multiple choices.*

#### ***Health problems for recommendation of TCM to anybody***

Just like for personal use of TCM, majority of respondents recommended use of TCM therapies to others for pain management (65.5%, n=55) followed by acute diseases (42.9%, n=36). Chronic diseases ranked third (31.0%, n=26). Psychiatric conditions (16.7%, n=14), pregnancy (15.5%, n=13) and other conditions (dental caries, fresh cut wound, hemorrhoids, infertility and skin disease) (11.9%, n=10) were the least health problems for recommendation of TCM to others (Figure 2).

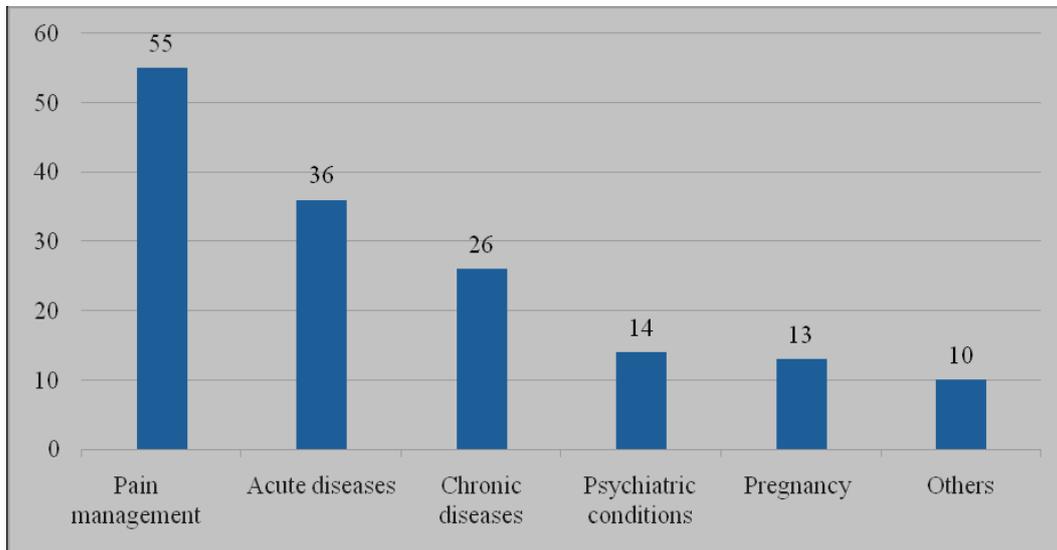


Figure 2. Health problems for recommendation of TCM to anybody

**c) Asking patients about use of TCM (communication with patients on TCM).**

When asked whether respondents asked patients about use of TCM when consulting or providing care to them, 193 (72.0%) of all respondents responded yes while 75 (28.0%) responded no. However, when the 193 who had asked patients about TCM use were asked about the frequency of asking patients on their use of TCM therapies, only 83 (43.0%) of them reported they asked them every time they met a new patient, 92 (47.7%) asked sometimes, while 18 (9.3%) asked them very rarely. Thus majority (57.0%, n=110) of those who asked about TCM only did so sometimes or rarely (Figure 3).

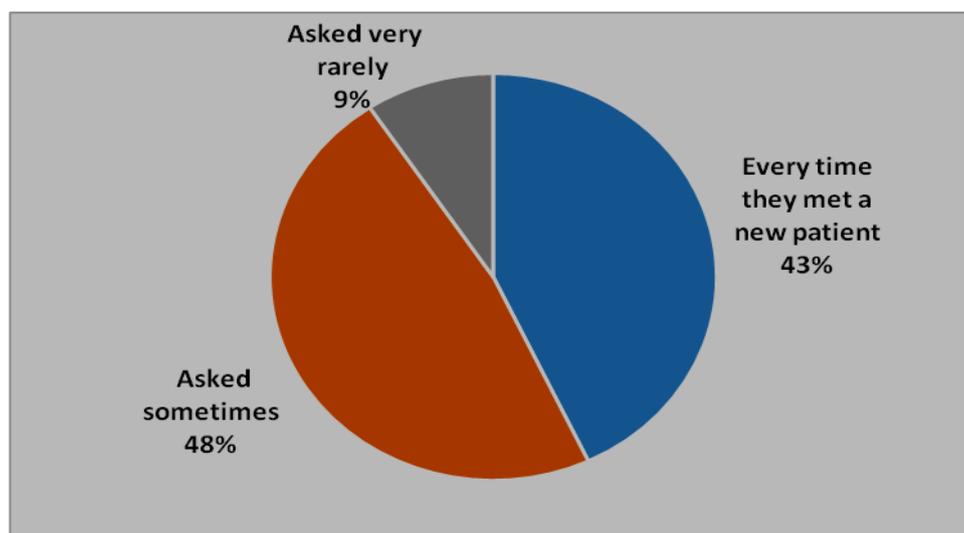


Figure 3. Frequency of asking about use of TCM

**Main concern for asking patients about use of TCM therapies**

More than half of the respondents who asked patients about TCM use (n=193) were more concerned about the delay in seeking treatment (55.7%, n=107) rather than toxicity from drug interactions with TCM (20.8%, n=41), side effects (17.2%, n=33), efficacy of TCM (4.7%, n=9) and other concerns which included: patient irregularity on the ward, TCM overdose and wrong conclusions (1.6%, n=3) (Figure 4).

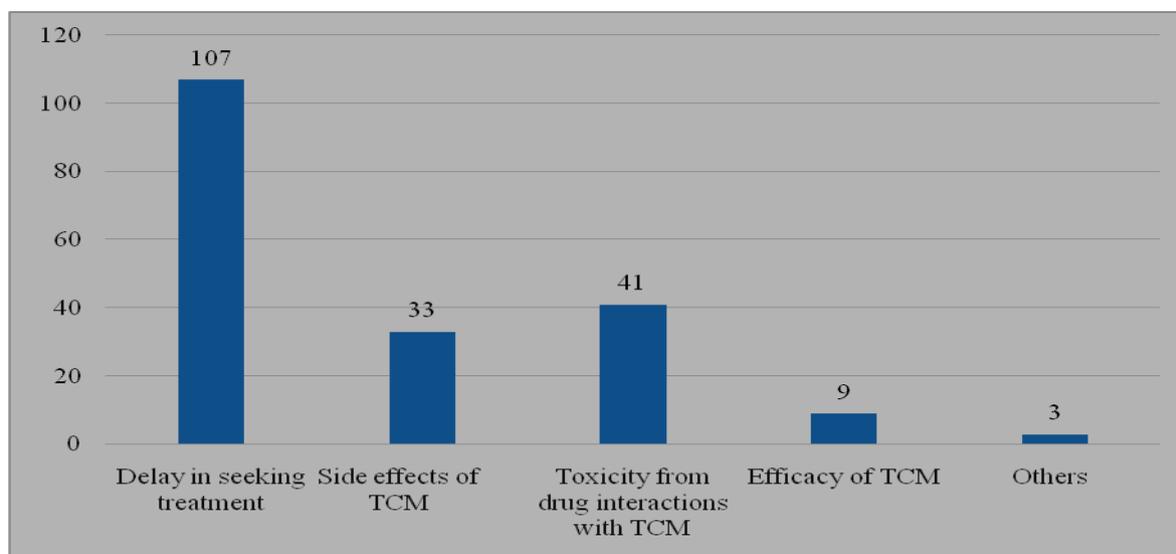


Figure 4. Main concern for asking patients about use of TCM therapies

### 3.7 Relationship Between Recommendation of TCM Use and Communication on TCM

There was a statistically significant relationship between personal use of TCM and both recommendation of TCM to others and communication to patients on use and effects of TCM (Table 7).

Table 7. Recommendation of and communication on TCM by personal use of TCM

Variables	Personal use of TCM, n(%)		p-value (X <sup>2</sup> )
	Ever used	Never used	
<b>Recommendation of TCM use to others</b>			
▪ Yes	79 (53.7)	5 (4.1)	<b>&lt;0.001*</b>
▪ No	68 (46.3)	116 (95.9)	
<b>Communication/asking patients on use &amp; effects of TCM</b>			
▪ Yes	114 (77.6)	79 (65.3)	<b>0.026*</b>
▪ No	33 (22.4)	42 (34.7)	

### Independent predictors of personal use of TCM and recommendation of TCM to others

All variables that had tested statistically significant ( $p < 0.05$ ) using chi-squared test, for personal use and recommendation of TCM to others, were entered into a multiple binary logistic regression model to determine the independent predictors of personal use of TCM and recommendation of TCM to others. Results revealed the independent predictors of personal use and recommendation of TCM to others to be: presence of a TCM provider in the family, attendance of any training/CME on TCM in years of service and rural location of the hospital. In addition, provision of TCM as a business and service as health professional for more than 5 years were also found to be independent predictors for recommendation of TCM to others (Table 8).

Table 8. Predictors of personal use and recommendation of TCM to others

Independent variables	Personal use of TCM				Recommendation of TCM			
	<i>B</i>	<i>OR</i>	95% CI	<i>p</i> -value	<i>B</i>	<i>OR</i>	95% CI	<i>p</i> -value
<b><i>Presence of any TCM provider in the family</i></b>								
▪ Yes	1.852	6.375	2.799-14.519	<0.001	1.515	4.547	2.264-9.132	<0.001
▪ No (reference)	-	-	-	-	-	-	-	-
<b><i>Attendance of any training/CME on TCM</i></b>								
▪ Yes	1.509	4.521	2.030-10.067	<0.001	0.969	2.636	1.286-5.403	0.008
▪ No (reference)	-	-	-	-	-	-	-	-
<b><i>Location of the hospital</i></b>								
▪ Rural	0.833	2.300	1.279-4.135	0.005	0.788	2.200	1.156-4.185	0.016
▪ Urban (reference)	-	-	-	-	-	-	-	-
<b><i>Provision of TCM as a business</i></b>								
▪ Yes	-	-	-	0.134	3.538	34.393	4.196-281.917	0.001
▪ No (reference)	-	-	-	-	-	-	-	-
<b><i>Duration of service as health professional</i></b>								
▪ > 5 years	-	-	-	-	0.724	2.064	1.052-4.047	0.035
▪ ≤ 5 years (reference)	-	-	-	-	-	-	-	-

**Note:** *B* = Logistic regression coefficient, *OR* = Odds ratio

#### 4. Discussion

Available literature indicates variations in TCM practices among conventional health care workers (HCWs) across the globe. In this study we found that 54.9% of nurses and midwives in the study area had personally ever used TCM and nearly half (46.9%) of these had used it in the past 12 months. This prevalence is only slightly lower than the 60% TCM use among the general population (MoH Uganda, 1999). This finding contrasts with that of countries such as Israel (87.3%) (Samuels *et al.*, 2010) and USA (76% in past one year) (Johnson *et al.*, 2012) in which personal use of TCM/CAM was found to be generally higher among HCWs than in the general population. The observed rate of personal use is however, comparable to those in other countries like Iran (57.6%) (Adib-Hajbaghery & Hoseinian, 2014) and Qatar (50.9%) (Al-Shaar *et al.*, 2010) which are in the process of integrating TCM into their health care systems. Given that nurses and midwives have better access to western medicine compared to the general population, this prevalence is comparatively high. The fact that nearly half of ever users had used it in the past 12 months implies that recent use is equally. It can therefore be concluded that the personal use of TCM among nurses and midwives in North Western Uganda is common.

The most common TCM therapies ever used were mainly the traditional therapies as per the Uganda public private partnership for health policy classification of TCM therapies (MoH Uganda, 2012b). The only exception to this was nutritional supplements and body massage which were among those most commonly used. Use of nutritional supplements could have been high because they are usually covered in medical training thus the respondents may have been familiar with them. Therapies most commonly used within the past 12 months however included not only nutritional supplements and body massage, but also other complementary medicine (CM) therapies such as reflexology and bio-disc which were more used compared to traditional medicine (TM) therapies such as hydrotherapy, spiritualism and traditional bone setting (Table 3). This indicates that CM therapies are increasingly getting utilized among the health professionals as they penetrate the Ugandan health care market.

The fact that therapies most commonly ever used were mostly of TM category is comparable to those in studies in Iran (Adib-Hajbaghery & Hoseinian, 2014) and Qatar (Al Shaaret *et al.*, 2010) but differs from studies in Israel (Samuels *et al.*, 2010) and USA (Johnson *et al.*, 2012) in which body massage, herbal medicine, meditation touch therapies prayer and diets, multivitamins and minerals, herbal supplements, mind – body therapies and manipulative therapies – were the commonly used therapies. From these observations, it appears that the level of integration of TCM training and provision into health care systems has a bearing on the types of TCM/CAM used among health professionals. This view is further supported by the finding that respondents in the current study most commonly obtained TCM therapies from relatives and friends rather than TCM or WM providers (Table 4). This indicates that TCM use in this setting is more of an informal or traditional practice. We can therefore conclude here that: i) that use of specific TCM therapies varies from place to place, ii) TM therapies are more commonly used in the Ugandan setting although CM therapies are steadily gaining ground, iii) the levels of integration of TCM/CAM training and practice into formal health care systems influences the specific therapies that are commonly used among conventional health professionals in a given setting.

Pain (53.1%) and acute diseases (49.6%) such as malaria, pneumonia, gastrointestinal problem, simple cough, common cold/flu etc. were the most common personal health problems for personal use of TCM therapies compared to chronic diseases (15.0%), pregnancy (12.2%), psychiatric conditions (10.2) and others (11.6%) (Figure 1). This is in agreement with the study among Iranian health care staff which found the common reasons for use of TCM to be digestive diseases, colds, migraine and head aches, skin disorders and diabetes (Adib-Hajbaghery & Hoseinian, 2014). Johnson *et al.* (2012) however, found that health care workers in the USA mainly used CAM to manage back, neck or joint pain and anxiety. Although pain is a common health problem for use of TCM/CAM in most studies, acute diseases appear to follow it as the next common condition in the developing world as opposed to chronic conditions which are more prevalent in the developed countries.

The commonest reasons given for use of TCM were that it is readily available, accessible and cheap (42.2%), followed by the fact that modern medicine did not help (40.8%). This contrasts with the US study in which the commonest reason given for personal use was for general wellness (67.8%) while the least was that WM was too expensive (3.9%) (Johnson *et al.*, 2012). These observations are in agreement with the WHO observation that use of TCM in developing countries is often attributable to its accessibility and affordability (WHO, 2013) while in many developed countries CAM use appears to be related to factors other than tradition and cost (WHO, 2002). We can therefore conclude that TCM is mainly used to meet critical and often lacking health care needs in developing world while in the developed countries, it is used mainly for health promotional purposes. This means that to be able to meet the growing health care needs of their people, developing countries need to invest more resources in TCM to make it more safe and effective.

This study found that fewer respondents (31.3%) had ever recommended use of TCM to anybody compared to those who had ever personally used it (54.9%). This finding is similar to that of Al Shaaret *et al.* (2010) which found that although 50.9% of general practitioners in Doha had personally experienced use of CAM, only 24.8% of them had referred patients for it mainly due to lack of knowledge and training. Similarly, in the Iranian study among health care staff, it was found that 88.4% of the health care staff had no previous education on TCM, 56.7% had experience of personal use of TCM and only 56% had recommended TCM therapies to others (Adib-Hajbaghery & Hoseinian, 2014). It can therefore be concluded that the level of knowledge and training on TCM affects the rate of recommendation of TCM use to others. This view is further supported by our finding of the attendance of any TCM training/CME in the years of clinical practice as an independent predictor for the recommendation of TCM to others ( $OR = 2.546$ , 95%  $CI = 1.286-5.403$ ) (Table 8). The commonest reasons and health problems reported for recommendation of TCM to others were the same as those for given for personal use of TCM (Tables 5 and 6). It can therefore be concluded that the reasons and health problems for recommendation of TCM to others usually do not differ from those for personal use of TCM among health care professionals.

It is important for health professionals to ask patients that they care for about their use of TCM so that they can discuss issues related to the benefits, side effects, drug interactions, etc. with them for better health outcomes. Although 72% of respondents in this study reported having asked patients about use of TCM, only 43.0% of those who asked did so every time they met a new patient, and the majority (57.0%) asked only sometimes or rarely. This finding is in agreement with other studies done in Uganda by Auerbach *et al.* (2012) and Langlois-Klassen *et al.* (2008) that found that there is a limited health provider – patient communication on the use of TCM despite occurrence of herb toxicities among some of the TCM users. This finding implies that health professional – patient communication on use and effects of TCM in our setting is currently limited. This is despite the existing evidence that shows that patients are more likely to disclose TCM use if they are specifically asked about it (Langlois-Klassen *et al.*, 2008; Change *et al.*, 2011). The low level of knowledge among health

professionals possibly contributes to this status quo, as they may not feel competent enough to discuss TCM use and effects with their patients. This view is further supported by the fact that majority of respondents' main concern for asking patients about use of TCM was the delay in seeking treatment (55.7%) but not toxicity from drug interactions with TCM (20.8%) or side effects of TCM therapies (17.2%) (Figure 4). Although there was a statistically significant association between communication with patients on use and effects of TCM and personal use ( $p = 0.026$ ) (Table 7), most respondents only rarely and or sometimes asked patients about TCM use (Figure 3). Given the finding by Holroyd *et al.* (2008) that training in CAM was associated with increased likelihood of discussing CAM with clients, we can conclude that the nurses and midwives in this study infrequently asked their patients about use and effects of TCM because of their low level of knowledge/training on TCM therapies.

Statistical analysis showed statistically significant associations ( $p$ -values  $< 0.05$ ) between TCM practices (personal use and recommendation to others) and respondents religion, location of hospital, presence of a family member who is a TCM provider, provision of TCM as a business and duration of years served as a health professional (Table 1). The rest of the sociodemographic variables did not have any statistically significant association with TCM practices. TCM practices also had statistically significant associations with knowledge (attendance of training or CME on TCM in the years of work) and the levels of respondents' agreement with all the attitudinal statements. Multiple logistic regression further showed that nurses and midwives who had a TCM provider in the family, attended any training/CME on TCM in years of service and who were working in a rural hospital were more likely to personally use and recommend TCM therapies to others. In addition, provision of TCM as a business and service as health professional for more than 5 years were also found to be independent predictors for recommendation of TCM to others (Table 8). Personal use also had a strong association with recommendation of TCM to others ( $p < 0.001$ ) (Table 7). We can therefore conclude that respondents' TCM practices are influenced by some sociodemographic factors, level of knowledge/training and attitudes.

These findings are in agreement with those of previous studies which associated personal use of TCM/CAM by health care workers with the provision of, referral for and general openness to the integration of CAM therapies in health care practices (Tracy *et al.*, 2005; Zoe *et al.*, 2014; Adib-Hajbaghery & Hoseinian, 2014; Chang *et al.*, 2011). Quite unique to this study however, is the finding of presence of a TCM provider in the family, rural location of the hospital, provision of TCM as a business and service as health professional for more than 5 years as the independent predictors for TCM practices (Table 8). In addition, the fact that the other sociodemographic variables such as age, gender, cadre, ownership of hospital, level of qualification, and income level had no statistically significant associations with TCM practices as in other studies, reflects the contextual variations in the determinants of TCM practices.

A limitation of this study was that no hospital from the private for profit sector was included. This was because there was no established private hospital in the region by the time of the study. Some of the practicing private-for-profit staff could however, have been accessed in the selected public or PNFP hospitals since dual employment is common in Uganda. Future studies in a similar setting should where possible, sample respondents from all categories of hospitals to make results more representative.

## 5. Conclusion

In this study we have demonstrated that the current practices of nurses and midwives towards TCM are somewhat mixed. Whereas personal use has been found to be common, recommendation to others is low and communication with patients on use and effects of TCM is irregular. Nurses and midwives who have a TCM provider in the family, attended any training/CME on TCM in years of service and or are working in a rural hospital were more likely to personally use and recommend TCM therapies to others. TCM practices have also been shown to be associated with the attitudes of the respondents. Traditional therapies have been found to be more personally used and recommended to others compared to complementary therapies mainly due to limited levels of training on TCM. The health problems for TCM use and recommendation have mainly been found to be pain and acute diseases. Similarly, TCM is mainly personally used and recommended to others by the respondents because it is readily available, accessible and cheap and because Western Medicine (WM) at times does not help.

The results indicate that improvement of TCM practices amongst nurses, midwives and other health care professionals could help to meet critical health care needs of the health professionals and their patients especially in rural areas. This requires training of health professionals on TCM therapies to equip them with evidence based knowledge. The results also indicate that TCM is already popular among health professionals.

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## Abbreviations

CAM: Complementary and Alternative Medicine.

CM: Complementary Medicine.

CME: Continuous Medical Education.

KAP: Knowledge, Attitudes and Practices.

MoH: Ministry of Health.

PNFP: Private Not For Profit.

PPPH: Public Private Partnership for Health.

TCM: Traditional and Complementary Medicine.

TM: Traditional Medicine.

WHO: World Health Organisation.

WM: Western Medicine.

## Competing interests

The authors declare that they have no competing interests.

## Authors' contributions

YA conceived and designed the study, collected and interpreted data, and drafted the manuscript.

OK interpreted the data, critically revised, edited the manuscript and served as corresponding author for purpose of this publication.

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**Appendix: Questionnaire**

**Instruction:** Please complete each question by filling in the spaces provided or ticking the appropriate responses from the options provided.

**Knowledge Questions:**

- 1) Indicate whether you have: Never heard of therapy (1); Heard of therapy but don't know the principles (2); Know the principles (3), regarding each of the traditional and complementary medicine (TCM) therapies listed below by ticking (  ) the box under the appropriate response.

S/n	TCM therapy	Your level of knowledge		
		Never heard of therapy	Heard of therapy but don't know the principles	Know the principles (how it works)
-	-			
i	Herbalism (use of herbs)	<input type="checkbox"/> ①	<input type="checkbox"/> ②	<input type="checkbox"/> ③
ii	Traditional bone-setting	<input type="checkbox"/> ①	<input type="checkbox"/> ②	<input type="checkbox"/> ③
iii	Traditional birth attendance (TBA)	<input type="checkbox"/> ①	<input type="checkbox"/> ②	<input type="checkbox"/> ③
iv	Traditional dentistry	<input type="checkbox"/> ①	<input type="checkbox"/> ②	<input type="checkbox"/> ③
v	Hydro-therapy	<input type="checkbox"/> ①	<input type="checkbox"/> ②	<input type="checkbox"/> ③
vi	Spiritualism (consulting spirits)	<input type="checkbox"/> ①	<input type="checkbox"/> ②	<input type="checkbox"/> ③
vii	Nutritional supplements	<input type="checkbox"/> ①	<input type="checkbox"/> ②	<input type="checkbox"/> ③
viii	Body massage	<input type="checkbox"/> ①	<input type="checkbox"/> ②	<input type="checkbox"/> ③
ix	Acupuncture	<input type="checkbox"/> ①	<input type="checkbox"/> ②	<input type="checkbox"/> ③
x	Reflexology	<input type="checkbox"/> ①	<input type="checkbox"/> ②	<input type="checkbox"/> ③
xi	Yoga (meditation)	<input type="checkbox"/> ①	<input type="checkbox"/> ②	<input type="checkbox"/> ③
xii	Bio-disc	<input type="checkbox"/> ①	<input type="checkbox"/> ②	<input type="checkbox"/> ③

xiii	Ayurvedic medicine	<input type="checkbox"/> ①	<input type="checkbox"/> ②	<input type="checkbox"/> ③
xiv	Chiropractic medicine	<input type="checkbox"/> ①	<input type="checkbox"/> ②	<input type="checkbox"/> ③
xv	Homeopathy	<input type="checkbox"/> ①	<input type="checkbox"/> ②	<input type="checkbox"/> ③

2) Where did you get the information on the TCM therapies named in question 1 above? (**Tick all those that apply to you**).

- ①Mass media (Radio, TV, Newspaper, Internet)
- ②Books/journals
- ③Training school
- ④Continuing Medical Education (CME)
- ⑤Training by TCM practitioners
- ⑥Oral tradition from elders & peers
- ⑦Others (specify)\_\_\_\_\_

3) Have you ever attended any training or continuous medical education (CME) session on TCM in the years you have worked as a Nurse/Midwife?

- ①Yes
- ②No

**Attitude Questions:**

4) Please indicate whether you: Strongly Agree (1), Agree (2), Undecided (3), Disagree (4), or Strongly Disagree (5) with the following statements about TCM therapies.

(Tick, √ in the appropriate box in front of each statement)

S/n	Statement	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
i	TCM therapies and practices are beneficial in prevention and management of some diseases	<input type="checkbox"/> ①	<input type="checkbox"/> ②	<input type="checkbox"/> ③	<input type="checkbox"/> ④	<input type="checkbox"/> ⑤
ii	I (respondent) would provide TCM to clients if given an opportunity to do so	<input type="checkbox"/> ①	<input type="checkbox"/> ②	<input type="checkbox"/> ③	<input type="checkbox"/> ④	<input type="checkbox"/> ⑤
iii	I (respondent) would like to attend some courses, trainings or CME on TCM	<input type="checkbox"/> ①	<input type="checkbox"/> ②	<input type="checkbox"/> ③	<input type="checkbox"/> ④	<input type="checkbox"/> ⑤
iv	Some TCM therapies work better than modern medicines	<input type="checkbox"/> ①	<input type="checkbox"/> ②	<input type="checkbox"/> ③	<input type="checkbox"/> ④	<input type="checkbox"/> ⑤
v	Modern medicine providers should collaborate on best patient care options with TCM providers	<input type="checkbox"/> ①	<input type="checkbox"/> ②	<input type="checkbox"/> ③	<input type="checkbox"/> ④	<input type="checkbox"/> ⑤
vi	TCM should be integrated into formal health care practice to enable holistic care	<input type="checkbox"/> ①	<input type="checkbox"/> ②	<input type="checkbox"/> ③	<input type="checkbox"/> ④	<input type="checkbox"/> ⑤
vii	The regulation of TCM practice in Uganda needs to be strengthened.	<input type="checkbox"/> ①	<input type="checkbox"/> ②	<input type="checkbox"/> ③	<input type="checkbox"/> ④	<input type="checkbox"/> ⑤
viii	A course on TCM should be included in the training curricula of all medical professionals.	<input type="checkbox"/> ①	<input type="checkbox"/> ②	<input type="checkbox"/> ③	<input type="checkbox"/> ④	<input type="checkbox"/> ⑤

**Practice Questions:**

5) Have you **ever** personally used any TCM therapies for management of your personal health problem?  
①Ever used②Never used (*If Never used, go to question 12*).

6) If you have ever used any TCM in your life indicate by ticking  in the spaces provided which of the following TCM therapies you: used (1) or did not use (2).

S/n	TCM therapy	Used	Not used
i	Herbalism (use of herbs)	<input type="checkbox"/> ①	<input type="checkbox"/> ②
ii	Traditional bone-setting	<input type="checkbox"/> ①	<input type="checkbox"/> ②
iii	Traditional birth attendance (TBA)	<input type="checkbox"/> ①	<input type="checkbox"/> ②
iv	Traditional dentistry	<input type="checkbox"/> ①	<input type="checkbox"/> ②
v	Hydro-therapy	<input type="checkbox"/> ①	<input type="checkbox"/> ②
vi	Spiritualism (consulting spirits)	<input type="checkbox"/> ①	<input type="checkbox"/> ②
vii	Nutritional supplements	<input type="checkbox"/> ①	<input type="checkbox"/> ②
viii	Body massage	<input type="checkbox"/> ①	<input type="checkbox"/> ②
ix	Acupuncture	<input type="checkbox"/> ①	<input type="checkbox"/> ②
x	Reflexology	<input type="checkbox"/> ①	<input type="checkbox"/> ②
xi	Yoga (meditation)	<input type="checkbox"/> ①	<input type="checkbox"/> ②
xii	Bio-disc	<input type="checkbox"/> ①	<input type="checkbox"/> ②
xiii	Ayurvedic medicine	<input type="checkbox"/> ①	<input type="checkbox"/> ②
xiv	Chiropractic medicine	<input type="checkbox"/> ①	<input type="checkbox"/> ②
xv	Homeopathy	<input type="checkbox"/> ①	<input type="checkbox"/> ②

7) Have you personally used any TCM therapy in the past 12 months?  
①Used ②Not used (*If not used, go to question 9*)

8) If you have personally used any TCM in the last 12 months, indicate by ticking  in the spaces provided which of the following TCM therapies you: used (1) or did not use (2).

S/n	TCM therapy	Used	Not used
i	Herbalism (use of herbs)	<input type="checkbox"/> ①	<input type="checkbox"/> ②
ii	Traditional bone-setting	<input type="checkbox"/> ①	<input type="checkbox"/> ②
iii	Traditional birth attendance (TBA)	<input type="checkbox"/> ①	<input type="checkbox"/> ②
iv	Traditional dentistry	<input type="checkbox"/> ①	<input type="checkbox"/> ②
v	Hydro-therapy	<input type="checkbox"/> ①	<input type="checkbox"/> ②
vi	Spiritualism (consulting spirits)	<input type="checkbox"/> ①	<input type="checkbox"/> ②
vii	Nutritional supplements	<input type="checkbox"/> ①	<input type="checkbox"/> ②
viii	Body massage	<input type="checkbox"/> ①	<input type="checkbox"/> ②
ix	Acupuncture	<input type="checkbox"/> ①	<input type="checkbox"/> ②
x	Reflexology	<input type="checkbox"/> ①	<input type="checkbox"/> ②
xi	Yoga (meditation)	<input type="checkbox"/> ①	<input type="checkbox"/> ②
xii	Bio-disc	<input type="checkbox"/> ①	<input type="checkbox"/> ②
xiii	Ayurvedic medicine	<input type="checkbox"/> ①	<input type="checkbox"/> ②
xiv	Chiropractic medicine	<input type="checkbox"/> ①	<input type="checkbox"/> ②
xv	Homeopathy	<input type="checkbox"/> ①	<input type="checkbox"/> ②

- 9) In case you ever used any TCM therapy/therapies in your life, please indicate where you obtained it from. (**Tick all that apply to you**).
- ①Personal sources
  - ②Relatives
  - ③Friends
  - ④TCM provider
  - ⑤Western Medicine provider
  - ⑥Others (please specify) \_\_\_\_\_
- 10) In case you personally ever used any TCM therapy/therapies, indicate your health problem(s) for which you used it.
- ①Chronic disease (e.g. Hypertension, Diabetes, Cancer, Liver, Heart disease, HIV etc.)
  - ②Acute disease (e.g. Malaria, pneumonia, gastrointestinal problem, simple cough, common cold/fluetc.)
  - ③Pain management (musculoskeletal pain, headache etc.)
  - ④Psychiatric condition (depression, stress etc.)
  - ⑤Pregnancy (during antenatal care, labour or just after delivery)
  - ⑥Others (please specify) \_\_\_\_\_
- 11) In case you personally ever used any TCM therapy/therapies, indicate why you used it (**Tick all those that applied to your case**).
- ①Modern medicine did not help
  - ②Modern medicine is expensive
  - ③I believed TCM works better for my condition
  - ④TCM is readily available, accessible and cheap
  - ⑤TCM is natural and therefore has fewer side effects
  - ⑥Others (please specify) \_\_\_\_\_
- 12) Have you ever recommended the use of TCM for anybody?
- ①Yes ②No (**If No, go to question 15**)
- 13) If yes in **question 12 above**, why did you recommend the use of TCM? (**Tick all those that applied to your case**).
- ①Modern medicine did not help
  - ②Modern medicine was expensive
  - ③I believed TCM works better for the condition
  - ④TCM is readily available, accessible and cheap
  - ⑤TCM is natural and therefore has fewer side effects
  - ⑥Others (please specify) \_\_\_\_\_
- 14) If yes **in question 12**, for which of the following health problems did you recommend the person to use TCM therapy? (**Tick all those that apply in your case**).
- ①Chronic disease (e.g. Hypertension, Diabetes, Cancer, Liver, Heart disease, HIV etc.)
  - ②Acute disease (e.g. Malaria, pneumonia, gastrointestinal problem, simple cough, common cold/flu, etc.)
  - ③Pain management (musculoskeletal pain, headache etc.)
  - ④Psychiatric condition (depression, stress etc.)
  - ⑤Pregnancy (during antenatal care, labour or just after delivery)
  - ⑥Others (please specify) \_\_\_\_\_

- 15) Have you ever provided any TCM therapies to people as a business?  
 ① Yes  ② No
- 16) How often do you meet people who are using both TCM and western medicine? (*Tick only one choice*).  
 ① Very often  ② Often  ③ Rarely  ④ Very rarely  
 ⑤ Not sure
- 17) When consulting or providing care to patients, do you normally ask them whether they are using any TCM therapies?  
 ① Yes  ② No (*If No, go to question 20*)
- 18) If yes, how often do you ask patients on their use of TCM therapies?  
 ① Every time I meet a new patient  
 ② Sometimes  
 ③ Very rarely
- 19) If yes to question 17, what is **your main concern** for asking patients about use of TCM therapies? (*Tick only one choice*).  
 ① Delay in seeking treatment  
 ② Side effects of TCM  
 ③ Toxicity from drug interactions with TCM  
 ④ Efficacy of TCM  
 ⑤ Others (please specify) \_\_\_\_\_

**Socio-demographic Questions:**

- 20) What is your age (in years)? \_\_\_\_\_
- 21) Gender:  ① Male  ② Female
- 22) Marital status:  ① Never married  ② Married  ③ Separated  
 ④ Divorced  ⑤ Widowed
- 23) Title:  ① Nurse  ② Midwife
- 24) Level of qualification:  ① Certificate  ② Diploma  
 ③ Bachelor's Degree  ④ Master's Degree  
 ⑤ Others, specify \_\_\_\_\_
- 25) What is the ownership of the nurse/midwifery training school(s) where you trained from?  
 ① Public/government training school(s)  
 ② Private training school(s)  
 ③ Both Public and Private training schools
- 26) What is your Religion?  
 ① Catholic  
 ② Anglican  
 ③ Islam  
 ④ Pentecostal  
 ⑤ Others  
 ⑥ No religion
- 27) What is the ownership of hospital where you are currently working?  
 ① Public/government  ② Private not for profit

- 28) What is the location of the hospital where you are currently working?
- ①Urban
  - ②Peri-urban
  - ③Rural
- 29) What is the total number of years you have served as a health professional (from initial qualification to date)? = \_\_\_\_\_ years.
- 30) Do you have any family member who is a provider of any traditional and complementary medicine (TCM) therapy or modality?
- ①Yes
  - ②No
  - ③I don't know
- 31) What is your total household monthly income (salary + other sources of income e.g. from some businesses, additional job, rent, husband/wife etc.) in Uganda shillings?
- ①Less than 400,000
  - ② 400,000 – 599,999
  - ③ 600,000 - 799,999
  - ④ 800,000 - 999,999
  - ⑤ 1,000,000 or more

**THE END!**

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