



# A survey of traditional and faith healers providing mental health care in three sub-Saharan African countries

Oluyomi Esan<sup>1</sup> · John Appiah-Poku<sup>2</sup> · Caleb Othieno<sup>3</sup> · Lola Kola<sup>4</sup> · Benjamin Harris<sup>5</sup> · Gareth Nortje<sup>6</sup> · Victor Makanjuola<sup>1</sup> · Bibilola Oladeji<sup>1</sup> · LeShawndra Price<sup>6,7</sup> · Soraya Seedat<sup>6</sup> · Oye Gureje<sup>1</sup>

Received: 16 September 2017 / Accepted: 13 November 2018 / Published online: 19 November 2018  
© Springer-Verlag GmbH Germany, part of Springer Nature 2018

## Abstract

**Background** Traditional and faith healers constitute an important group of complementary and alternative mental health service providers (CAPs) in sub-Saharan Africa. Governments in the region commonly express a desire to integrate them into the public health system. The aim of the study was to describe the profile, practices and distribution of traditional and faith healers in three sub-Saharan African countries in great need for major improvements in their mental health systems namely Ghana, Kenya and Nigeria.

**Materials and methods** A mapping exercise of CAPs who provide mental health care was conducted in selected catchment areas in the three countries through a combination of desk review of existing registers, engagement activities with community leaders and a snowballing technique. Information was collected on the type of practice, the methods of diagnosis and the forms of treatment using a specially designed proforma.

**Results** We identified 205 CAPs in Ghana, 406 in Kenya and 82 in Nigeria. Most (> 70%) of the CAPs treat both physical and mental illnesses. CAPs receive training through long years of apprenticeship. They use a combination of herbs, various forms of divination and rituals in the treatment of mental disorders. The use of physical restraints by CAPs to manage patients was relatively uncommon in Kenya (4%) compared to Nigeria (63.4%) and Ghana (21%). CAPs often have between 2- to 10-fold capacity for patient admission compared to conventional mental health facilities. The profile of CAPs in Kenya stands out from those of Ghana and Nigeria in many respects.

**Conclusion** CAPs are an important group of providers of mental health care in sub-Saharan Africa, but attempts to integrate them into the public health system must address the common use of harmful treatment practices.

**Keywords** Traditional and faith healers · Mental health care · Sub-Saharan African countries · Survey

## Introduction

There is a huge treatment gap for mental disorders in low- and middle-income countries (LMIC) with more than 80% of persons with severe mental disorders unable to access treatment (conventional or by CAPs) in any 12-month period [1]. To bridge this gap, especially in sub-Saharan Africa (SSA), it is imperative to recognize the contributions of traditional and faith healers in the provision of mental health care. This is because these healers are often the de facto mental health care providers in many communities in SSA [2, 3].

The demand for complementary and alternative medical care has been on the increase worldwide due to a combination of factors. First, there is an increase in the proportion of the population seeking alternative therapies [4–9]. Second,

✉ Oluyomi Esan  
oluyomie@yahoo.com

<sup>1</sup> Department of Psychiatry, University of Ibadan, Ibadan, Nigeria

<sup>2</sup> Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

<sup>3</sup> University of Nairobi, Nairobi, Kenya

<sup>4</sup> World Health Organization, Geneva, Switzerland

<sup>5</sup> University of Liberia, Monrovia, Liberia

<sup>6</sup> Stellenbosch University, Stellenbosch, South Africa

<sup>7</sup> National Institutes of Health, Bethesda, USA

many users find complementary and alternative health care approaches (CAPs) to be more congruent with their own values, beliefs, and philosophical orientation toward health and life than conventional medical care [10]. For these users, close family support and membership of faith or religious communities in times of major illness and stress are invaluable. Unfortunately, many patients and their relatives lack such family and spiritual support while receiving conventional medical care [11–15]. It has been suggested that perhaps one explanation for the growth in the interest in CAPs is because conventional medicine is largely unable to fill this void [11]. In much of SSA, CAPs are composed of traditional and faith healers.

Nearly half of individuals seeking conventional health care for mental disorders in Africa choose CAPs as their first care provider before presenting at conventional medical facilities [16–18]. This choice may be associated with delays in accessing formal mental health services [16, 19]. Reasons for the appeal of CAPs include their cultural perceptions of mental disorders, the psychosocial support afforded by such healers, their availability, accessibility and affordability [20].

Many governments and health care stakeholders or agencies are interested in the health care services provided by CAPs and are therefore considering incorporating the beneficial aspects of CAPs services and practices into conventional health service delivery systems [21–23]. For example, the WHO Traditional Medicine (TM) Strategy 2014–2023 [24] is aimed at (1) supporting member states in harnessing the potential contribution of traditional medicine or CAPs to health, wellness and people-centered health care, and (2) promoting the safe and effective use of TM by regulating, researching and integrating TM products, practitioners and practice into public health systems, where appropriate.

The approaches to care by CAPs differ from that of conventional medicine not only in its concept and explanatory model of the cause of illness or disorder, but also in the mode of diagnosis and of treatment, among other parameters [25]. Therefore, for such integration to take place, a better understanding of CAPs practices is required in order to assure of their quality, safety, and efficacy. In this study, we aim to explore the profile, practices and distribution of CAPs in selected three sub-Saharan African countries of Ghana, Kenya and Nigeria, in order to arrive at a better understanding of their contribution to mental health care delivery.

Kenya is located in East Africa. It has a population of 48 million (July 2017 est.). Kenyans come from multiple ethnic and religious backgrounds. Over 80% of Kenyans are Christians. Muslims constitute 11.2%, traditionalists 1.7% and others 4% (2009 est.) Agriculture is the main stay of the Kenyan economy, contributing about one-third of the GDP [26].

Ghana is located in West Africa. It has a population of 28 million (July 2017 est.). Ghana also has a multiple ethnic

and religious background. Christians constitute 71.2% Muslim 17.6%, traditional religion 5.2%, other 0.8% (2010 est.). Ghana's economy is mainly market-based.

Nigeria is located in the western part of Africa. With a population of 191 million, it is the most populous African country (July 2017 est.). It is composed of more than 250 ethnic groups. Nigeria's population is composed of 50% Muslims, 40% Christians and 10% indigenous religion [26].

## Methodology

This study was a part of a series of formative studies that preceded the launching of a randomized controlled trial of a collaborative shared care program being implemented by CAPs and providers of conventional mental health service. A detailed mapping exercise of CAPs who provided service for persons with mental illness in three catchment areas in Ghana, Kenya, and Nigeria was conducted. The exercise was conducted in geographic regions with a population of at least 2 million and consisting of both rural and urban areas in each of the countries. We developed an initial list of names of CAPs facilities fulfilling our criteria from information obtained from: (1) series of meetings with the leaders of CAPs associations in the study areas and (2) official lists of registered traditional healers at the respective ministries or departments of health or of social and welfare services. The governments of the three countries have such lists, which are supposed to provide a basis for the regulation of the practice of TH. The lists are hardly ever comprehensive because only a few of the healers choose to register. A snowballing approach was subsequently used such that every CAP who provided treatment for patients with mental disorders and practiced in the selected catchment area was identified. Informed consent to participate in the study was obtained from the practitioners involved in the study. Information on the nature and purpose of the study was administered to the CAPs in the local languages to aid their understanding of the research study. All relevant consent forms were translated through a process of iterative back translation into the local languages.

A specially designed proforma was used to collect information on the profile of practitioners and the range of services provided by each identified facility. Information was gathered on the type of CAPs, type and duration of training received, mode of diagnosis, range of mental health conditions treated and the capacity for admission (i.e., number of beds). Additional information on staffing profile, training experiences, forms of treatment (including methods considered to be non-humane), was collected and supplemented with direct observation. Data were collected from the CAPs and by direct observation of the CAPs facility by the trained

research assistants. The research assistants had a minimum of a first degree or its equivalent.

The selected catchment area in Nigeria consisted of 11 local government areas (formally classified by government as 5 urban, 6 rural) in and around the city of Ibadan. The total population as at the 2006 census was 2,550,595 [27]. The selected catchment areas in Ghana were 12 districts in Brong Ahafo region and 17 districts in Ashanti. The combined estimated population was 7,091,363 [28]. In Kenya, three counties were selected from Nairobi; these were Nairobi, Kajiado and Machakos. The estimated population was 5,597,340 in Kenya [29].

For contextual comparisons, we also obtained the numbers of psychiatric inpatient beds available relative to the total population for the same geographical areas, i.e., hospital beds to population ratio. Our estimate of hospital beds included inpatient beds available at public, private, general,

and specialized hospitals. This included beds for both acute and chronic care. The study was approved by the University of Ibadan/University College Hospital Health Research Ethics Committee. The relevant Health Research Ethics Committee in the Ghana and Kenya also approved the study.

## Results

### Types of healers

We identified 205 CAPs in Ghana, 406 in Kenya and 82 in Nigeria. In Kenya almost 90% of the CAPs identified were herbalists compared to 28% in Nigeria and 6.4% in Ghana. Most of the CAPs identified in Ghana (51%) were diviners (Table 1). There were overlaps in the functions or profiles

**Table 1** Practice and training profile of the CAPS

Variables of interest	Ghana (205)		Kenya (406)		Nigeria (82)	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Categories of CAPs						
Herbalist	13	6.4	355	88.8	23	28.0
Diviners	104	51.0	5	1.2	20	24.4
Christian faith healers	43	21.1	14	3.5	11	13.4
Islamic faith healers	3	1.5	4	1.0	25	30.5
Herbalist and Christian	28	13.7	15	3.8	2	2.4
Herbalist and Islam	13	6.4	1	0.2	1	1.2
Witchcraft	–	–	3	0.8	–	–
Others	–	–	3	0.8	–	–
Types of patients seen						
Mentally ill only	5	2.4	15	3.7	21	25.6
Both physically and mentally ill	200	97.6	386	96.3	61	74.4
Description of mental illness treated						
Epilepsy	204	99.5	20	6.5	51	62.2
Puerperal psychosis	204	99.5	6	2.0	82	100.0
Alcohol/drug use	203	99.0	17	5.5	80	97.6
Madness/psychosis/insanity	204	99.5	257	75.1	82	100.0
Depression	203	99.0	19	6.3	–	0
Others	48	23.4	28	9.2	2	2.4
Types of training received						
No training	79	38.9	66	16.8	15	18.3
Formal training <sup>a</sup>	23	11.3	26	6.5	8	9.8
Informal training with relatives	39	19.2	175	44.0	22	26.8
Informal training with non-relatives	62	30.5	136	34.3	37	45.1
Length of training						
1–5 years	53	43.8	254	67.6	25	37.3
6–10 years	37	30.6	64	17	25	37.3
11–15 years	12	9.9	17	4.5	4	6.0
16–20 years	7	5.8	16	4.3	7	10.4
> 20 years	12	9.9	25	6.6	6	9.0

<sup>a</sup>Training in either pastoral institutes or formal herbal institutes

of the CAPs with some combining both Christian or Islamic faith healing with herbalism.

### Types of patients seen and description of mental illness treated

Most (> 70%) of the CAPs in the three countries reported that they treated both physical and mental illnesses. The range of mental illness treated by CAPs included epilepsy, puerperal psychosis, alcohol or drug use, madness, psychosis or insanity, and depression. However, in Nigeria, none of the CAPs reported treating depression (Table 2).

### Types of training received and length of training

Most of the CAPs identified in the three countries had some form of training before commencing their practices as CAPs. The proportion of CAPs with some training ranged from 61.1% in Ghana to 85.2% in Nigeria (Table 1). The median duration of training ranged from 4.5 years in Kenya to 8 years in Nigeria. Across the 3 regions, most (> 60%) had training between 1 and 10 years. Formal training was reported by persons who had attended either a pastoral institute or some form of herbal training institution.

**Table 2** Approaches to patient management by the CAPs

Variables of interest	Ghana (205)		Kenya (406)		Nigeria (82)	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
<b>Mode of diagnosis</b>						
Divination/divine revelation	123	60.0	56	13.9	54	65.9
Signs and symptoms	50	24.4	341	84.4	35	42.7
Divination and signs/symptoms	39	19.0	18	4.5	–	–
<b>Types of intervention</b>						
Herbs and fetish practices	169	83.3	109	26.8	57	69.5
Prayer and fasting	105	51.7	86	22.0	46	56.1
Scarification	27	13.2	16	4.0	32	39.0
Orthodox medications	11	5.4	5	1.3	1	1.2
Rituals	118	57.6	71	17.8	70	85.4
Others <sup>a</sup>	6	2.9	6	1.5	13	15.9
<b>Use of physical restraint</b>						
Yes	43	21.0	14	4.0	52	63.4
No	162	79.0	383	96	30	36.6
<b>Options for physical restraint</b>						
Chains	40	19.5	6	1.5	40	48.8
Rope/cloth	6	2.9	8	2.0	–	0
Shackles	1	0.5	–	–	16	19.5
<b>Other forms of non-humane treatment</b>						
Starvation	0	0	0	0	0	0
Beating	2	1.0	5	1.3	7	8.5
Exposure to elements	1	0.5	0	0	–	0
Overcrowding	1	0.5	0	0	3	3.7
Cohabitation of sexes	–	0	0	0	–	0
Sleeping on bare floor	2	1.0	0	0	12	14.6
Inappropriate bodily exposure	–	0	0	0	1	1.2
Confinement (to a room)	1	0.5	1	0.3	14	17.1
Others	2	1.0	5	1.3	1	1.2
<b>Admission of patients</b>						
Yes	120	58.5	0	0	71	86.6
No	85	41.5	406	100	11	13.4

NB

<sup>a</sup>Others include offering of sacrifices, the use of animal products and minerals

## Mode of diagnosis

While about 84.4% of the CAPs in Kenya depended on signs and symptoms to make a diagnosis, most (> 60%) of the CAPs in Ghana and Nigeria depended on divination or divine revelation (Table 2).

## Treatment approaches and the use of potentially harmful or abusive treatment methods

Practices used by CAPs included flogging, locking patients up in cages, keeping patients in over-crowded rooms, preventing patients from having their baths, forcing patients to go on fasts (or starving patients) and restricting patient movements through shackling. Some patients were impregnated during the course of treatment (Table 2). The use of physical restraints by CAPs to manage patients was relatively uncommon in Kenya (4%) compared to Nigeria (63.4%) and Ghana (21%). In general, the use of practices that could be described as inhumane was less common in Kenya than in Ghana and Nigeria.

## Admission of patients and number of beds

While most (86.6%) CAPs in the study areas in Nigeria admitted patients; in Kenya none of the identified CAPs admitted patients. In the study area in Ghana, CAPs had 877 admission spaces for the mentally ill while in Nigeria 677 beds were available for psychiatric admissions in the CAPs facilities. There were no admission facilities for the mentally ill in CAPs facilities in the study areas in Kenya (Table 2).

## Hospital beds per population ratio (HBPR)

The ratio of hospital beds to population for CAPs in the three regions ranged from 0.14 to 0.27 per 1000 people, while for conventional medical practice the ratio ranged from 0.01 to 0.14 in the catchment area (Table 3).

**Table 3** Population estimates and mental health admission facilities in the study catchment areas

	Total population (catchment area)	Beds per 1000 in CAPs facilities	Beds per 1000 in the orthodox public and private mental health services in catchment area
Nigeria	2,550,595	0.27	0.04
Kenya	5,597,340	No beds	0.14
Ghana	7,091,363	0.14	0.01

## Discussion

Our aim was to investigate the profile, practice and distribution of CAPs in three sub-Saharan African countries. Our findings are remarkable in several respects. First, the profile and practice of CAPs in the 3 regions were similar in many respects despite the wide difference in geographical location, culture, and tradition. Second, CAPs in sub-Saharan Africa appear to treat a wide range of mental health problems and associated difficulties. Third, patient management procedures often simulate those of conventional medical practitioners including history taking, physical examination and treatment. Fourth, CAPs seem to have a larger capacity for inpatient admission than conventional mental health practitioners in many communities.

## Profile of CAPs

A major finding of this study was the overlap in the categories and practices of CAPs. As such, the various categories of CAPs were not mutually exclusive. For example, there were herbalist Christians, and Islamic herbalists. This may be reflective of the religious make-up of the general population. For example, in Kenya even though the majority (> 60%) of the population are Christians [30], many Christians incorporate traditional beliefs into their practice of Christianity. As such, the mixture of Christianity and herbalism by CAPs is likely a reflection of religious practices in the population. The same trends were evident in Nigeria and Ghana. Additionally, the majority (> 70%) of the CAPs in the three countries treat both physical and mental illnesses which means that the practice of most CAPs in the three countries is devoid of specialization. We also observed that in the three countries some CAPs often prescribe conventional medications in their practices. This is similar to findings by Sorsdahl et al. in South Africa who reported that traditional healers incorporated modern ingredients into their treatment practices [31].

In Kenya most of the CAPs were herbalists, whereas the majority in Ghana were diviners. In Nigeria, however, there was no dominant CAPs category. Rather, the distribution appeared more uniform. The cross-country variation may be due to diverse explanatory models for mental

illness prevalent in the various countries. It is noteworthy that we found no CAPs claiming to practice witchcraft in Nigeria and Ghana. A plausible explanation for this may be that witches are believed to have supernatural powers, but unlike diviners, witches use these powers to cause harm. It is believed that the job of the diviners is to counter the evil workings of the witches [30]. Consequently, it may be socially unacceptable to openly admit that one is a witch in these places.

### Type of patients seen

CAPs in sub-Saharan Africa appear to treat a wide range of health problems and associated difficulties. Apart from treating physical and mental illnesses, they are consulted for problems like protection against enemies, promotion or career advancement, financial difficulties, infertility or sterility, a desire to know what the future holds, finding a suitor and achievement of academic or scholarly prowess [9, 32–35]. Over 75% of the CAPs in the three countries were confident in their ability to treat psychosis. This percentage is higher than the proportion from a similar study in rural South Africa where 47% claimed they could successfully treat such patients. In the South African study, 47% of the CAPs claimed they could successfully treat seizure disorders [36], while in the current study, over 60% of the CAPs from Ghana and Nigeria claimed they were able to treat epilepsy/seizure disorder. In Kenya only 6.5% claimed that they could treat epilepsy/seizure disorder. While the proportions of CAPs alluding to the fact that they could treat some of these illnesses may imply the availability of “manpower” to treat these disorders, the high proportion may be a reflection of the magnitude of the sources of delay to conventional medical treatment, if the treatments offered by such CAPs are ineffective.

Our finding that between 74 and 98% of CAPs treat both physical and mental disorders is in keeping with other African literature. In Ghana, only 2.4% of the CAPs “specialize” in treating mental illnesses. This may be because problems of all types—physical, mental, economic and political—may be attributed to spiritual causes which the CAP is expected to treat and so it follows that CAPs provide a broad package of assistance. Another reason is economic. CAPs who specialize in treating only mental illness see fewer patients than CAPs who treat a wide range of problems. It is not uncommon to see signboards of CAPs in Nigeria with inscriptions such as “we treat Fibroids, Hypertension, Diabetes, Mental Illnesses, spiritual problems” and “any kind of problem”.

### Type of training and length of training

Various pathways to becoming a CAP have been described. These include inheritance within the family, initiation by

(ancestral) spirits, the experience of having an illness cured by another CAP, and own decision followed by a period of apprenticeship. It is also common to become a CAP via a combination of these routes [33]. Many CAPs in sub-Saharan Africa receive some form of training before commencing practice [34, 35]. However, this training may be by “spirits” [35]. In the same vein the current study found that at least 60% of CAPs had some training. The training was however mostly informal and could last over a decade. A long duration of training was commonly reported by healers who had continued to work with an older healer for several years and had considered such association as a continuing apprenticeship.

### Mode of diagnosis

According to Oyebola (1980) patients typically do not provide a history of symptoms to traditional healers or divulge their problems. Contrary to practice by conventional medical practitioners who depend on signs and symptoms to make a diagnosis, CAPs are expected to find out such information by themselves from deities or gods by divination. CAPs who depend on physical signs and symptoms to make a diagnosis are thus considered substandard or seriously incompetent by other CAPs who do not require such information, and are thought to be incapable of dealing with “deep” problems [37]. In the current study, over 80% of the CAPs in Kenya depended on signs and symptoms to make a diagnosis and a substantial proportion of the CAPs from Ghana and Nigeria also used signs and symptoms to make a diagnosis. However, several CAPs in Ghana and Kenya make a diagnosis by combining divination with signs and symptoms. Signs and symptoms are used to make a diagnosis and divination is subsequently used to uncover etiological factors, such as who may be responsible, a past transgression by the patient that may have brought about the current illness, and any other such factors.

### Type of intervention

In sub-Saharan Africa, clients often believe CAPs are not able to address their illnesses or problems without adequately dealing with the spiritual dynamics that account for the problems, illnesses or misfortunes [38]. CAPs therefore tend to probe deeply into the psychological, spiritual, and social contexts of patients’ problems and offer treatments or remedies using sacrifices, sorcery, fasting, prayers and herbs as these techniques are perceived to be effective. Patient management procedures often simulate those of conventional medical practitioners [39]. As such, in our sample the treatment of patients by CAPs usually starts with history taking where CAPs inquire about the presenting complaints, duration of illness, circumstances surrounding the

onset of illness (e.g., who the client might have offended, what treatments have been offered in the past to the patient), a ‘physical examination’, and investigation (often by consulting some oracles). This is followed by diagnosis (done through divination or divine revelation, signs, symptoms or a combination of these). Treatment is then offered in the form of prayers, fasting, herbs, flogging, etc. [2]. In the current study, we observed these components in varying degrees and forms. Most (> 70%) of the treatments offered by CAPs in the three countries centered on the use of herbs, fasting and prayers. Remarkably in the three countries, some of the CAPs used conventional medications. This comprised, for example, antipsychotics such as haloperidol and chlorpromazine.

### Patient admission and number of beds

About 90% and 60% of the CAPs in Nigeria and Ghana, respectively, have inpatient admission facilities. Involuntary admission and the use of force are the rule in such CAPs facilities. This contrasts sharply with Kenya where none of the CAPs had admission facilities. This does not imply that CAPs in Kenya do not admit patients. In Kenya, it is illegal for a patient to be forcefully admitted and the legislation in this regard is enforced. We got the impression that some CAPs get around this by having patients detained by their families with the CAPs providing treatment during home visits.

### Hospital beds per population ratio

Hospital bed population ratios (HBPR) can be used as a means of estimating inpatient service availability to the public in a geographically defined area [40]. It could be as low as 0.4 beds per 1000 persons as in Afghanistan, and as high as 13.7 as in Japan. In the UK it is 3 beds per 1000 persons. Table 3 also shows that in Ghana CAPs appear to have nearly a 14 times greater ratio (beds per 1000 persons) than conventional practitioners, while in Nigeria the ratio was 7 times greater. Even though these CAP ‘beds’ may not strictly qualify as beds in many instances, it is noteworthy that CAPs have a higher capacity for in-inpatient admission than their conventional counterparts in these areas.

### Inhumane or unproven practices

Practices by CAPs could be classified into three categories: possibly helpful, definitely harmful, and apparently innocuous. Possibly helpful practices include the use of herbs, minerals and psychotherapy. Practices that are definitely harmful include beating, shackling, scarification, starvation and the use of prolonged seclusion and isolation. Among practices that are apparently innocuous are those involving the use

of sacrifices (such as those of animals or plants), rituals (e.g., ritualistic dancing), giving offerings or alms, prayers, consulting with spirits, use of anointing oil, incantations or chanting, and short-term fasting by proxy (either by healers or patients or their relations). The overall estimates of the use of inhumane practices reported in this study are lower than in other studies. For example in an earlier study conducted among Yoruba traditional mental health practitioners in Nigeria, the prevalence of the use of scarification was 69.8% [41]. In our study the prevalence of scarification as a mode of treatment in Nigeria was 39%. This could mean that health education activities directed at these inhumane practices in recent years have yielded positive results. It is also possible that these are underestimates since we only reported these practices when observed by research assistants, leaving the possibility open that some unobserved practices were prevalent but hidden. Overall the inhumane practices observed were commoner in Nigeria than in Kenya and Ghana. It is concerning that several CAPs consider these practices to be therapeutic. For instance, in Nigeria, the Yorubas have an adage that says “beating or flogging is the treatment for the insane”. Hence, it is not surprising that beating was over 6 times more common in Nigeria than in Ghana and Kenya. These inhumane practices were fewer in Kenya partly due to the fact that the study was conducted in settings where admission of patients by CAPs was less common.

### Other findings

Overall, the profile of CAPs in Kenya stands out from those of Ghana and Nigeria in many respects. Kenya had less divination/divine revelation and more reliance on signs and symptoms, less harmful or inhumane practices, higher rates of informal training, higher HBPR in the conventional mental health services than Ghana and Nigeria. This may be a reflection of the differences in the health care systems in the three countries. The prevalence of unmet healthcare needs is related to the health care system and to socioeconomic circumstances in a country. The less integrated, and uninterrupted healthcare is, and the poorer the socioeconomic situation, the more the unmet healthcare needs [42]. For example in 2014, government health expenditure per capita in Kenya was 47\$, in Ghana \$31 and in Nigeria \$30 [43]. This means Kenya invested over 150% what Ghana and Nigeria each invested in their conventional health care systems. These investments may have accounted for the more positive indices from Kenya.

The results of our study should be interpreted with caution in the light of certain limitations. First, our inability to verify the claims made by the CAPs. Second, with the snowball sampling technique that was adopted for the study it may be impossible to determine sampling bias or make accurate inferences about the CAPs based on the obtained

sample. Third, the bed population ratios may be inaccurate as many beds in tertiary care and private hospitals, as well as in the CAPs facilities may be occupied by patients referred from other areas outside of the catchment areas that were mapped in this study.

In conclusion, CAPs are an important component of the mental health care system in sub-Saharan Africa. The results of this study show that CAPs have a heterogeneous profile even though they share commonalities in terms of their functions and practice. The majority treats both physical and mental illness. Like conventional medical practitioners, they undergo a period of training although the nature of that training is diverse. While CAPs were observed to engage in certain harmful practices, they also engage in potentially beneficial practices and apart from the areas studied in Kenya, they are often the main sources of inpatient care in many communities. The profile of CAPs in Kenya appears to stand out from those of Ghana and Nigeria in many respects. There is need to develop and assess workable collaboration between them and conventional mental health service with a view to harnessing their skills, reducing the harmful and abusive approaches to care that they use, and thereby improving the outcome of patients with severe mental health conditions who use CAPs services.

## References

- Demyttenaere K et al (2004) Prevalence, severity, and unmet need for treatment of mental disorders in the World Health Organization World Mental Health Surveys. *Jama* 291(21):2581–2590
- Agara AJ, Makanjuola AB, Morakinyo O (2008) Management of perceived mental health problems by spiritual healers: a Nigerian study. *Afr J Psychiatry (Johannesbg)* 11(2):113–118
- Ensink K, Robertson B (1999) Patient and family experiences of psychiatric services and African indigenous healers. *Transcult Psychiatry* 36(1):23–43
- Eisenberg DM et al (1998) Trends in alternative medicine use in the United States, 1990–1997: results of a follow-up national survey. *Jama* 280(18):1569–1575
- Goldbeck-Wood S et al (1996) Complementary medicine is booming worldwide. *BMJ* 313(7050):131–133
- Rasmussen NK, Morgall JM (1990) The use of alternative treatments in the Danish adult population. *Complement Med Res* 4:16–22
- Vaskilampi T, Merilainen P, Sinkkonen S (1993) The use of alternative treatments in the Finnish adult population. *Clinical research methodology for complementary therapies*. Hodder & Stoughton, London, pp 204–229
- MacLennan AH, Wilson DH, Taylor AW (1996) Prevalence and cost of alternative medicine in Australia. *Lancet* 347(9001):569–573
- Peltzer K (2009) Utilization and practice of traditional/complementary/alternative medicine (TM/CAM) in South Africa. *Afr J Tradit Complement Altern Med* 6(2):175
- Ezeome ER, Anarado AN (2007) Use of complementary and alternative medicine by cancer patients at the University of Nigeria Teaching Hospital, Enugu, Nigeria. *BMC Complement Altern Med* 7(1):28
- Baum M et al (2006) Role of complementary and alternative medicine in the care of patients with breast cancer: Report of the European Society of Mastology (EUSOMA) Workshop, Florence, Italy, December 2004. *Eur J Cancer* 42(12):1702–1710
- Choi H et al (2011) Diffusion tensor imaging of anterior commissural fibers in patients with schizophrenia. *Schizophr Res* 130(1–3):78–85
- Kopacz MS (2014) The spiritual health of veterans with a history of suicide ideation. *Health Psychol Behav Med* 2(1):349–358
- Nixon AV, Narayanasamy A, Penny V (2013) An investigation into the spiritual needs of neuro-oncology patients from a nurse perspective. *BMC Nurs* 12:2
- Williams AL (2006) Perspectives on spirituality at the end of life: a meta-summary. *Palliat Support Care* 4(4):407–417
- Burns JK, Tomita A (2015) Traditional and religious healers in the pathway to care for people with mental disorders in Africa: a systematic review and meta-analysis. *Soc Psychiatry Psychiatr Epidemiol* 50(6):867–877
- Odinka PC et al (2014) The socio-demographic characteristics and patterns of help-seeking among patients with schizophrenia in south-east Nigeria. *J Health Care Poor Underserved* 25(1):180–191
- Puckree T et al (2002) African traditional healers: what health care professionals need to know. *Int J Rehabil Res* 25(4):247–251
- Bakare MO (2013) Pathway to care: first points of contact and sources of referral among children and adolescent patients seen at neuropsychiatric hospital in South-Eastern Nigeria. *Niger J Med* 22(1):52–56
- Ae-Ngibise K et al (2010) ‘Whether you like it or not people with mental problems are going to go to them’: a qualitative exploration into the widespread use of traditional and faith healers in the provision of mental health care in Ghana. *Int Rev Psychiatry* 22(6):558–567
- Bodeker G (2001) Lessons on integration from the developing world’s experience. *BMJ* 322(7279):164–167
- Bodeker G, Kronenberg F (2002) A public health agenda for traditional, complementary, and alternative medicine. *Am J Public Health* 92(10):1582–1591
- Lim B, Park J, Han C (2009) Attempts to utilize and integrate traditional medicine in North Korea. *J Altern Complement Med* 15(3):217–223
- World Health Organization (2013) WHO traditional medicine strategy: 2014–2023
- Fosu GB (1981) Disease classification in rural Ghana: framework and implications for health behaviour. *Soc Sci Med B* 15(4):471–482
- Agency CI (2018) The World fact book 2018. Central Intelligence Agency, Langley
- National Population Commission of Nigeria (2006) Population and Housing Census 2010 [cited 2014 Jan 21]; Available from: <http://www.population.gov.ng/images/Priority%20table%20Vol%204.pdf>
- Ghana - Population and Housing Census (2010) Ghana—Population and Housing Census 2010. Available from: <http://catalog.og.ihsn.org/index.php/catalog/3780>
- Kenya National Bureau of Statistics (2010) Available from: [http://www.knbs.or.ke/index.php?option=com\\_content&view=article&id=176&Itemid=645](http://www.knbs.or.ke/index.php?option=com_content&view=article&id=176&Itemid=645)
- Leonor E, Tanford S (2015) Countries and their cultures [cited 2015 June 20]; Available from: <http://www.everyculture.com/Ja-Ma/Kenya.html>
- Sorsdahl K et al (2010) Explanatory models of mental disorders and treatment practices among traditional healers in Mpumalanga, South Africa: original article. *Afr J Psychiatry* 13(4):284–290

32. Pearce TO (1989) The assessment of diviners and their knowledge by civil servants in Southwestern Nigeria. *Soc Sci Med* 28(9):917–924
33. Gessler M et al (1995) Traditional healers in Tanzania: socio-cultural profile and three short portraits. *J Ethnopharmacol* 48(3):145–160
34. Mbwayo A et al (2013) Traditional healers and provision of mental health services in cosmopolitan informal settlements in Nairobi, Kenya. *Afr J Psychiatry* 16(2):134–140
35. Harries A et al (2002) Traditional healers and their practices in Malawi. *Trop Dr* 32(1):32–32
36. Audet CM et al (2017) Mixed methods inquiry into traditional healers' treatment of mental, neurological and substance abuse disorders in rural South Africa. *PLoS One* 12(12):e0188433
37. Oyebola D (1980) Traditional medicine and its practitioners among the Yoruba of Nigeria: a classification. *Soc Sci Med Part A Med Psychol Med Sociol* 14(1):23–29
38. Tsey K (1997) Traditional medicine in contemporary Ghana: a public policy analysis. *Soc Sci Med* 45(7):1065–1074
39. Gureje O et al (2015) The role of global traditional and complementary systems of medicine in treating mental health problems. *Lancet Psychiatry* 2(2):168–177
40. World Health Organization (2009) World Health Statistics 2009 [cited 2015 June 25]. Available from: [http://www.who.int/whosis/whostat/EN\\_WHS09\\_Table6.pdf](http://www.who.int/whosis/whostat/EN_WHS09_Table6.pdf)
41. Adelekan ML, Makanjuola AB, Ndom RJ (2001) Traditional mental health practitioners in Kwara State, Nigeria. *East Afr Med J* 78(4):190–196
42. Wiersma D (2006) Needs of people with severe mental illness. *Acta Psychiatr Scand Suppl* 429:115–119
43. Countryeconomy.com. (2018) [cited 2018 11 July 2018]; Available from: <https://countryeconomy.com/countries/compare>