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Abstract

Background: Poverty, inadequacy of health services, shortage of health workers, infectious diseases scourges, rampant shortage of drugs and equipment in existing health facilities make traditional medicine an important component of healthcare in Africa, especially in oral health care. This review was done to document the role of African traditional medicine in oral health care delivery in order to provide a comprehensive documentation, identify research gaps, and suggest perspectives for future research.

Materials and Methods: Available references or reports in English and French on the use of African traditional medicine in oral health care were consulted from published scientific journals, books, reports from national, regional and international organizations, theses, conference papers and other grey materials. Literature was searched on international online databases such as Pubmed, MEDLINE, Science Direct, Scopus and Google using the MeSH words "Traditional medicine or healer", "oral health", "dental caries", "dental", "primary oral health care" and "medicinal plants".

Results: Contemporary African communities operate a pluralistic health system whereby highly sophisticated biomedical health care co-exists and even competes with traditional medical practices. Though most patients opt for dual consultations, the introduction of biomedicine has never replaced traditional indigenous medicine and traditional healers are consulted for several reasons making dual treatment a common occurrence in many communities. Factors such as the lack of health care workers, inequalities in the health sector due to socio-cultural and socio-economic disparities prevent people from patronising both health care systems. Therapeutic methods used by African traditional healers include herbalism, psychotherapy, simple surgical procedures, rituals and symbolism. The types of medications used by traditional healers were classified as preventive and prophylactic medications. Some practices of traditional healers included tooth extractions with medicinal plants and also in other practices resulting in exposure to blood; practices involving the use of shared instruments had been reported to be responsible for the transmission of HIV/AIDS. Other harmful practices include gementomy, uvulectomy and different forms of infant oral mutilations.

Conclusion: Traditional healers provide dental care, but their work was not integrated with that of a dentist. Traditional healers have special qualities that make them highly effective in primary oral health care therefore making them inevitable stakeholders in primary oral health care delivery. The research gaps in this review include the integration of traditional medicine into the oral health care systems of many African countries and the evaluation of the treatment outcomes of traditional medicine in dental care.

Key words: Review, African traditional medicine, oral health.

Introduction

The use of traditional, complementary and alternative medicine (TCAM) is widespread in many countries of the world, specifically amongst patients with chronic or long term illnesses (WHO,2003;WHO,2002). In Western societies, more and more people have been using TCAM to treat their ailments, as a complement or substitute to more bio-medical treatment regimens (Kofi-Tsekpo, 2004). This has been due in part to the philosophical orientation of TCAM practitioners who actively engage with patients in their treatment which results in a more holistic approach to health (WHO,2003; Gqalenii et al.2007). Conventional Western biomedicine is increasingly regarded as expensive, inaccessible, depersonalized and not completely effective, especially for those patients with chronic diseases (WHO,2003).

The World Health Organization (WHO) defines traditional medicine (TM) as "health practices, approaches, knowledge, and beliefs incorporating plant, animal and mineral based medicines, spiritual therapies, manual techniques and exercises, applied singular or in combination, to treat, diagnose and prevent illnesses or maintain well-being"(WHO,2003).

Traditional healing practices have existed in Africa long before conventional medicine, and attempts by colonial governments and early religious missionaries to suppress it did not succeed. Traditional medicine (TM) is not only an untapped reservoir of knowledge, philosophy and history that offers the possibility of cures, but also provides a national heritage and a means of linking the land and its people (Kofi-Tsekpo, 2004).

Traditional Medicines (TM) Versus Complementary and Alternative Medicine (CAM)

In developed countries, the use of animal and plants products in the management of diseases is known as complimentary medicine and therefore many tend to refer to African traditional medicines as 'complementary' medicine. The terms "complementary medicine" and "alternative medicine" are used interchangeably with "traditional medicine" in some countries. Complementary/alternative medicine often refers to traditional medicine that is practised in a country but is not part of the country's own traditions (WHO, 2002). As the terms "complementary" and "alternative" suggest, they are sometimes used to refer to a health care that is considered supplementary to allopathic medicine. However, this can be misleading. In some countries, the legal standing of complementary/alternative medicine is equivalent to that of allopathic medicine; many practitioners are certified in both complementary/alternative medicine and allopathic medicine, and the primary care provider for many patients is a complementary/alternative practitioner (WHO, 2002). It has been argued that the term "African traditional medicine" is not

synonymous with "Alternative and complementary medicine" but rather is an African indigenous system of health care and therefore cannot be seen to be an 'alternative' to orthodox medicine (Kofi-Tseko, 2004).

Apart from the socio-cultural features of TM, its accessibility, client /community orientation and low cost had made it popular amongst Africans (Hodes, 1997; Diouf, 2013; Agbor and Naidoo, 2011). In African traditional medicine, the curative, training, promoting and rehabilitative services are referred to as clinical practices. These traditional health care services are provided through tradition and culture prescribed under a particular philosophy, e.g. *ubuntu* or *unhu*. Norms, taboos, tradition and culture which are the cornerstones of clinical practice of traditional medicine are the major reason for the acceptability of traditional health practitioners in the community they serve. The philosophical clinical care embedded in these traditions, culture and taboos have contributed to making traditional medicine practices acceptable and hence highly demanded by the population (Mhame, Busia and Kasilo, 2010).

All aspects of western perception of oral health like aesthetics, comfort and function are applicable in African traditional medicine. For example, amongst the Fulani tribe of West Africa, healthy, beautiful teeth were attributes of beauty and elegance, enhanced by tattoos and crafted crowns (Diouf, 2013). Their health problems were generally managed by healers or traditional practitioners who based their practices on empirical and 'handed down' knowledge; for example Socio-anthropological meanings were given to children with neonatal teeth (Diouf, 2013). For these reasons, it has been proposed that the socio-cultural aspects of health care and the place of herbal medicine in dentistry which are highly linked to African traditional medicine are important in the formulation and implementation of oral health projects and programmes in most African countries (Diouf, 2013).

Many reviews have been published on different aspects of African traditional medicine but none has been done on the role of traditional healers (TH) on provision of oral health care in Africa. Therefore, this review was done to document the role of African traditional medicine in oral health care delivery in order to provide a comprehensive documentation, identify research gaps, and suggest perspectives for future research.

Materials and Methods

Available references or reports on the use of African traditional medicine oral health care were consulted from published scientific journals, books, reports from national, regional and international organizations, theses, conference papers and other grey materials. Literature was searched on international online databases such as MEDLINE, Science Direct, Scopus and Google.

The PubMed/Google scholar database was primarily searched till June 2015 and MeSH words used were "Traditional medicine or healer", "oral health", "dental caries", "dental", "primary oral health care" and "medicinal plants". Publications were limited to English language and French. Relevant literature in common textbooks, bibliographies of papers and review articles of suitable peer reviewed journals were also analysed for additional information.

Continued Existence of TM and Oral Health Seeking Behaviour of Patients

During Colonial administrations, the use and practice of traditional medicine was prohibited and condemned as heathen and primitive (Ulin and Segall, 1980) while western medicine was provided to the western and local indigenous workforce employed and living in areas with western influences (Sander, 1989). African traditional medicine continued to be practised in areas where western medicine was not available and thrived because it was easily accessible, available, acceptable, affordable and dependable (Agbor and Naidoo, 2011; Nchinda, 1977; Hollenberg et al. 2008). With urbanisation, the use of traditional medicine has decreased, but in times of stress, even the most westernized African people seek consultations with TH (Sheriffs, 1996; Chitindingu, George and Gow, 2014). This could be due to the fact that the African TH shares the patient's language/dialect, idioms and other communication signals, both verbal and nonverbal, and this fosters the healer-client relationship (De Jong, 1991). In Africa, western medicine is often avoided for certain conditions like psychiatric diseases and epilepsy, as it is believed that it can only be cured by the socio-cultural and spiritual intervention of a traditional healer (De Jong, 1991; Uzobo, Olomu and Ayinmoro, 2014).

Western religions, education, urbanisation and globalisation in Africa have not affected the use of traditional medicine. Warren (1979) reported that students and health care workers in hospitals in Ghana continue to believe in the spiritual causation of certain illnesses and that these diseases are best treated by traditional priests/priestesses and spiritual churches (Warren, 1979). Feerman (2002) also noted a 'passionate ambivalence' towards African traditional medicines in some segments of the African populations particularly among the educated elites. Teshome-Bahiru (2006) reported that the process of urbanisation has greatly impacted on the use of traditional medicine in both rural and urban communities of Addis Ababa, Ethiopia, in both positive and negative ways. The introduction of Western culture particularly into rural parts of Africa has had a tremendous negative impact on the role traditional medicine plays and as Western education, Christianity and increased contact with the global community become an integral part of rural communities, taboos, traditions and customs have been affected and in some instances abandoned altogether (Mhame et al. 2010; Teshome-Bahiru, 2006 ; Kiringe, 2005).

These challenges notwithstanding, there is increasing evidence that traditional medicine continues to hold sway in both rural and urban communities of Africa even when modern health care facilities are available to meet wide range of health care needs (Sheriffs, 1996; De Jong, 1991; Bamidele, 2009 , Eduards, 1986). De Jong (1991) has reported that even educated people in urban cities still consult TH whose demand for services are high, as they are perceived to be skilled to help people cope with psychological and social problems associated with illness and disease. This revival and increased interest in traditional medicine is due to many reasons of which one of the most important is culture (De Jong, 1991). African indigenous healing is deeply rooted in the physical, emotional and spiritual aspects of beings and is extrinsically linked to religion or beliefs systems (De Jong, 1991) and directly linked to the African culture (Donnelly, 2005). It seeks to provide health, sanity, spiritual solace and other valued family and community collective virtues (including a return to traditional family virtues) (De Jong, 1991).

Agbor and Naidoo (2011) have noted that socio-cultural and economic factors affect the oral health care seeking behaviour of patients who visit traditional healers. A cross sectional study carried out in Cameroon, reported that most patients visiting the TH for their oral health needs because of the low cost (69%), TH understand their problems better (12%), fear of death from tooth extractions (8%), and hospital or clinics were too far away (5%) (Agbor and Naidoo, 2011) . Labhardt et al. (2010) contradict the

idea that the lack of money or geographical access to Western health care in rural Africa is the main reason for people to consult TH

Other studies have shown that patients with dental problems visit TH first, before a medical or dental practitioner (Burnett ,1999; Peltzer et al. 2006; Maclean and Bannerman, 1982). Maclean and Bannerman (1982) found that a higher number of older people visited TH than the younger age groups. Pelzer et al. (2006) suggested that patients visit TH because they provide client-centred and personalized health care that is tailored to meet their needs and expectations, paying special respect to social and spiritual matters. In Cameroon it was reported that treatment outcome was one of the factors responsible for patients to visit the hospital after seeking treatment from a TH (Agbor and Naidoo, 2011). For example it was reported that more than a third of dental patients reported only visiting the hospital or the dental clinic when their situation got worse (e.g. development of dento-alveolar abscesses, Ludwig's angina) (Agbor and Naidoo, 2011).

In conclusion, client satisfaction with traditional healer compared to allopathic medicine is related to interactions of the patients with the traditional healers. Traditional healer interacted very differently with their clients, using a more patient-centred communication style, to seek common ground with patients. This different type of interaction could be a relevant factor contributing to the popularity of traditional healers (Labhardt, 2010).

ATM/CAM in Contemporary Africa

CAM use in Africa is amplified by the presence of traditional healers, with estimates of one traditional healer present to every 200 people (Awah,2006). In sub-Saharan Africa, traditional healers (TH) far out-number modern health practitioners and the majority of the population uses traditional medicine. The World Health Organisation (WHO) estimates that eighty per cent of people in low income countries rely primarily on traditional medicine for their primary health care needs. Although the actual number of traditional healers is unknown in most countries, such healers constitute a significantly large group of practitioners who are recognized, trusted and respected by their respective communities (WHO,2000).Contemporary African communities operate a pluralistic health system whereby highly sophisticated biomedical health care co-exists and even competes with traditional medical practices. This situation has given people the opportunity to choose which of the health systems are suitable for them (Freeman,1992; Matheka and Demaio,2013).

Though most opt for dual consultations, the introduction of biomedicine has never replaced traditional indigenous medicine and traditional healers are consulted for several reasons, making dual treatment a common occurrence in many communities (Agbor and naidoo,2011; Freeman,1992).

Reasons for dual consultations are because both systems of health care could not adequately meet up the health care needs of the people. Factors such as the lack of health care workers, inequalities in the health sector due to socio-cultural and socio-economic disparities prevent people from patronising both health care systems (Freeman,1992). The uneven distribution of the health care work force, their inaccessibility, high costs of treatment and cultural differences make modern medicine(allopathic) a less favourable option for seeking health care (Freeman,1992; Matheka and Demaio,2013).

Traditional healers provide client-centred, personalized health care that is tailored to meet the needs and expectations of their patients. This makes them strong communication agents for health and social issues (Freeman,1992; UNAIDS ,2002). They have been found to have greater credibility than village health workers, especially with respect to social and spiritual matters (Wamber and Groleau,2012). In resource-constrained settings, traditional medicine provides access to treatment where expensive imported pharmaceuticals cannot (Agbor and Naidoo,2011; UNAIDS ,2002).

Nowadays although they can practice with a wide margin of freedom, official recognition of their profession faces challenges at three levels:

- i. At a socio-political level, they have restricted access to public space, limited freedom of speech, and therefore, are disabled to participate in any political decisions regarding legislature projects governing and protecting their professions and services.
- ii. Judicially, there is an absence of recognition based on the law, with no explicit legislation governing their profession and
- iii. At the economic level, there are no laws regulating remuneration of health services rendered by traditional healers (Wamber and Groleau,2012).

Choices between Biomedicine and TM for Oral Health Care

Traditional healers have been reported as first choice healthcare provider when they faced health problems in Ethiopia and Cameroon due to their efficacy and dissatisfaction with modern medicine (Agbor and Naidoo; Birhan , Giday and Teklehaymanot , 2011). In Senegal, it has been reported that a dentist or a traditional healer had been sought by only 33% of the population. The choice of therapy was influenced by educational level and having health insurance (health insurance does not cover traditional treatment). The main reasons for attending a traditional healer were linked to educational level, the type of dwelling and the participants' place of residence. Choosing to see a dentist was associated with age, the type of dwelling and the distance between the chosen locality and the dental clinic (Sangaré et al., 2012). In Tanzania, Sarita and Tuominen reported in a cross sectional study that all subjects reported using modern dental and medical health care services. Home remedy was the only indigenous method of treatment used for dental problems while for medical problems a traditional healer was the most commonly used indigenous alternative (Sarita and Tuominen, 1993). In Tanzania, the use of both indigenous and modern health care services was significantly lower for dental than for medical problems. They concluded that the pattern of utilization of health care services differs for medical and dental problems ((Sarita and Tuominen, 1993).

Types of Traditional Healers Involved in Oral Health Care Delivery and Their Training

Generally, traditional healers are classified into two specialised major groups i.e. diviners and herbalists (Agbor and Naidoo,2011), but a broader classifications include specialised TH like faith healers, traditional birth attendants, traditional surgeons, traditional psychiatrists and traditional medicinal ingredient dealers (Eduards, 1986; Freeman and Motsei, 1992).

These practitioners include diviners or fortune tellers, who may be seers, Alfes and priests. They use supernatural or mysterious forces, incantations and may prescribe rituals associated with the community's religious worship. Diviners are usually consulted for diagnosis of diseases, their causes and treatment (Agbor and Naidoo,2011; Eduards, 1986; Freeman and Motsei, 1992). With their ability to deal with the unseen, the supernatural, they are usually held in high esteem in the community. They are believed to have extra-sensory perception and can see beyond the ordinary man (Agbor and Naidoo,2011; Truter, 2007). Isangomas (Southern Africa) are diviners; they determine the cause of illness by using ancestral spirits, and nearly all are female. A diviner may or may not have knowledge of medicinal herbs. A diviner's specialty is divination where they operate within traditional religious supernatural contexts and act as a medium with the ancestral spirits or the supernatural. Diviners concentrate on diagnosing the unexplainable. They analyse the causes of specific events and interpret the messages of the ancestors (Truter, 2007). Although the focus is on divination, they may also provide medication for the specific case they have diagnosed. A person cannot choose to become a diviner. Training to become a sangoma is not a personal choice but is a calling bestowed by ancestors to a person (usually a woman) who then gets apprenticed to a qualified diviner for several months (Agbor and Naidoo,2011; Eduards, 1986; Freeman and Motsei, 1992; Truter, 2007).

Herbalists

Herbalism form the bases of African traditional medicines as most traditional healers practicing in Africa are herbalists (Diouf,2013;Agbor and Naidoo,2011; Mhame et al.2010; Truter, 2007). Inyangas are herbalists and possess extensive knowledge about curative herbs and medicines of animal origin. Nearly all are male (Truter, 2007).An inyanga (inyanga in Zulu, ixhwele in Xhosa, mganga in Swahili) specialises in the use of herbal and other medicinal preparations for treating disease. They possess an extensive knowledge of curative herbs, natural treatments and medicinal mixtures of animal origin (Truter, 2007), and unlike the diviners do not receive a 'calling', but rather chooses to become an inyanga and are trained by apprenticeship (Diouf,2013;, Mhame et al.2010, Truter, 2007). Their comprehensive curative expertise includes preventive and prophylactic treatments, rituals and symbolism as well as preparations for luck and fidelity. Some treat only one disease and are renowned experts on that disease or for diseases of specific organs (for example heart, kidney or lung disease consultants) (Truter, 2007).

In Cameroon, it was found that more than a fifth (23.8%) of the TH who are involved in oral health care delivery were herbalists and the remainder practiced both divination and herbal medicine (Agbor and Naidoo ,2011). It was also found out that less than half of the TH had formal training. Furthermore, the training was not standardized, as most were trained by fathers, uncles and other senior TH. The average duration of training for an herbalist was 7.5 years with training ranging between 4 to 10 years. Because of their longer training, herbalists have good knowledge and skills to treat patients, unlike diviners who do not undergo any form of apprenticeship (Agbor and Naidoo,2011).

Traditional Surgeons

The various forms of surgery recognized in traditional medical/dental care include:

- i. Incision, drainage removal of abscess, diseased toes or fingers, piercing of ear lobes and amputations of limbs (Assefa et al. 2005).
- ii. Wound management. Animal and plant products are used for the management of wounds (Agbor and naidoo, 2011; Dorai 2012).
- iii. Scarification /Cutting of tribal marks: Scarification involves cutting or making an incision into the skin, and then allowing the wound to heal, leaving a permanent scar. Scarification can also be referred to a small incision made into the skin with a lancet, bistoury, or scarificator, for different therapeutic purposes – so as to draw blood, or to discharge some effused fluid. Traditional surgeons usually cut tribal marks into the cheeks, bellies; the upper and lower limbs etc. and charred herbal products are usually rubbed into these bleeding marks to effect healing. This is very common among many West and East African tribes (Uzobo, 2014). According to Ayeni (2004), among the Yorubas for instance, herbal doctors, priests of the god of herbalism, Osanyin, and body artists administer a large number of medicines via incisions on the body. Some made short vertical marks under the eyes (gberejoju) of some children signify that medicines have been inserted to prevent the child from trembling or convulsion, a condition believed to be caused by seeing spirits.
- iv. Cutting of the uvula (uvulectomy): is widely practised and is believed to protect the patient from various infections of the oropharynx and the respiratory system (Asefa, et al. 2005). Traditional surgeons in the northern part of Nigeria and Cameroon are well versed in surgically removing the upper end of the throat flap (epiglottis) for the treatment of many illnesses (Ogah and Ocheni, 2014; Einterz, 1994). In children, uvulectomy is carried out to prevent presumed suffocation during pharyngitis in babies (Kikwilu and Hiza ,1994; 1992, Dada, 2011).
- v. Bone Setters: Bone setting or orthopaedic surgery is the art of pairing fractures and other orthopaedic injuries. Traditional bone setters are knowledgeable in the art and skill of setting broken bones in the traditional way so that they unite and heal properly (Ogunbodede, 1991). Little work has been done on the role of traditional healers in the management of jaws fractures (Ogunbodede, 1991).
- vi. Traditional Dental Surgeons: They carry out tooth extractions using crude instruments, medicinal plants (Agbor, Naidoo and Mbia, 2011). It is carried out for pain relief (Truter,2007; Agbor, Naidoo and Mbia, 2011).Ebinyo is a form of infant oral mutilation (IOM), widely practiced in rural areas of eastern Africa, in which traditional healers and other village elders extirpate the primary canine tooth follicles of infants (Eduards , 1986).

Methods Used for Treatments of Traditional Healers

There is a huge dichotomy of treatment approaches between biomedicine and African traditional medicine. African traditional medicine uses non-biomedical diagnoses and therapies that reflect cultural values and mores, while biomedicine remains largely divorced from culture, based instead on science. This is despite the fact that, like those of biomedicine, African diagnoses and treatments are based on careful observation and testing of remedies over time (Maynard,2004). Forms of treatment include but are not limited to surgical procedures, dietary therapy, herbalism and psychotherapy (Maynard,2004).

Therapeutic methods used by African traditional healers include herbalism, psychotherapy, simple surgical procedures, rituals and symbolism (Ngilisho, Moshia and Poulsen, 1994). The types of medications used by traditional healers can be classified as preventive and prophylactic medications (Mbatha, 2010), treatment for ailments (Baba and Kay, 1989) and medications used to "destroy the power in others" (Gumede, 1991; Hamza et al. 2005; Tapsoba and Deschamps, 2005; and El-Hilaly, 2003). African healing is influenced by natural cycles of days, seasons and natural occurrences and the accepted realities of the physician. Some practices of traditional healers resulting in exposure to blood (medicinal bloodletting for dental abscesses, rituals establishing "blood brotherhood," possibly ritual and medicinal enemas); practices involving the use of shared instruments (ritual scarification, group circumcision, genital tattooing etc.) had been reported to be responsible for the transmission of HIV/AIDS (Hardy, 1987).

African culture acknowledges that real healing lies, not in a synthetic pill but in recognition of a true position on the earth and in bringing actions into respectful balance with the natural world (Maynard, 2004).

Traditional Healers and Management of Oral Diseases

Lewis et al. (2004) reported on the oral health care knowledge and practices of African traditional healers from two communities in Zonkizizwe and Dube in the Gauteng Province of South Africa (Lewis et al. 2004). According to their findings, more than 90% of TH from both areas correctly identified photographs of gingival inflammation, dental caries and oral candidiasis (Lewis et al. 2004). More than half of the reported patients presented with mouth problems such as toothache, swollen gums and oral candidiasis. Considering that oral candidiasis has been reported as the most prevalent oral manifestation of HIV/AIDS and the fact that almost all traditional healers can recognize oral candidiasis suggests that traditional healers could play an essential role in the efforts to address early diagnosis of the oral manifestations of HIV/AIDS (Agbor and Naidoo, 2011; Lewis et al. 2004; Abdool Karim, 1998 and Graham et al. 2000).

A study carried out in Nigeria by Ogunbodede (1994) found that traditional healers were providing dental care, but their work was not integrated with that of a dentist. While they were open to collaborating with dental professionals, the reverse was not true (Ogunbodede, 1991). Traditional healers are more numerous than dental medical practitioners and are widely accepted by a large proportion of the population, therefore it is logical that their work be integrated with that of dental and medical practitioners (Ogunbodede, 1991).

Ngilisho et al. (1994) reported that sixty per cent of the villagers in Tanga region, Tanzania who suffered from toothache sought treatment from TH. They were treated with local herbs and obtained pain relief for months (Ngilisho et al. 1994). They concluded that the presence of modern health facilities did not influence the villagers' use of TH services, and that TH play an important role in the relief of acute pain, in underserved rural areas. Many oral diseases have been reported to be treated by TH but reports from developed countries concerning the impact of TH on oral health have been based on negative impact of TH such as dental mutilations caused by TH in tooth extractions and tooth germ extractions using crude techniques (de Zoysa et al. 1984; Pindborg, 1969; Rasmussen et al. 1992; Lambert et al. 2011).

However, one needs to be aware that some traditional practices may be harmful for example, the practice of extracting tooth buds and of rubbing herbs on to the gingivae of children to treat fevers and diarrhoea, as has been documented in countries such as Tanzania and Uganda (Ngilisho, 1994). There is a need for health education programmes to educate TH on the harmful effects of some traditional practices (Lewis et al. 2004; de Zoysa, 1984). Therefore, discouraging the adoption of deeply rooted traditional practices that are potentially hazardous to health and oral health needs to be made a public health priority (Ngilisho, 1994). This could be achieved by educating not only the general public, but also the TH and community leaders that convey the knowledge to their people.

Toothache and Dental Extractions Using Traditional Plants

Cases have been reported on the use of medicinal plants in the treatment of toothache and tooth extraction in Cameroon (Agbor and Naidoo, 2011; Agbor et al. 2011). Traditional medicines have been found to relieve toothaches with specific plant products and extract decayed and broken teeth in Kenya (de Zoysa, 1984).

Ritual dental extraction among Sub-Saharan African populations has been practised for centuries, yet little is known about the removal process for any ethnic group. Dinka and Nuer refugees to the US requested replacements for missing anterior teeth removed during childhood. Among 36 Sudanese refugees, 238 individual extractions had been performed. Three retained canine/incisor root fragments; their cases are presented, including memories of the tooth-extraction ritual (Willis, 2005).

Germectomy (Infant oral mutilation)

The practice by traditional healers in Tanzania, of extracting tooth buds or of rubbing herbs on to the gingivae of young children to cure fevers and diarrhoea, has been known for many years (Kikwilu and Hiza, 1997; Kikwilu and Hiza, 1992). Removal of deciduous canine tooth buds among infants below 2 years has been reported in several studies to be common mainly amongst communities in East Africa. It is very common in the Eastern African region like Tanzania (Kikwilu and Hiza, 1997; Kikwilu and Hiza, 1992), Ethiopia (68), Kenya (Mutai, 2010), Uganda (Acorsi et al. 2003, Iriso et al. 2000). This practice, known as ebino in Northern Uganda, the gauging of unerupted deciduous canine teeth occurs in approximately one in three children in some areas of Uganda. The main reason for the practice revolves around the belief that tooth buds or 'maggots' are false teeth, nylon or worms are responsible for diarrhoea, vomiting, fever and growth retardation in children, amongst other illnesses (Mutai, 2010). Traditional healers use very crude conditions often using unclean tools (Iriso et al. 2000) such as knitting needles, bicycle spokes, scissors or broken glass to extract the teeth. Post-ebino extraction complications included septicaemia, anaemia, difficulties in feeding and pain with some of the children requiring hospitalization (Jamieson, 2006).

In Tanzania, the extraction of lower incisors is to prevent diarrhoea as a result of persistent fevers and diarrhoea were the major symptoms which led parents to go to a traditional healer. However, 60% of the parents had taken their child to a hospital before going to a healer; 72% of these had attended at least three times but only 5.5% reported that the treatment given in the

hospital cured the condition (Kikwilu and Hiza, Kikwilu and Hiza, 1992). The majority of extractions (60.5%) were from the lower jaw, and almost all (99.4%) were canines. Tooth bud extraction was always bilateral (Kikwilu and Hiza, Kikwilu and Hiza, 1992).

Iriso et al., (2000) reported some complications of ebino "IOM" in the period 1992-98, ebino-related complications, mainly sepsis and anaemia, were among the leading causes of admission (n = 740) and hospital death (n = 156, case fatality rate = 21.1%, proportional mortality rate = 3.3%). They emphasized that discouraging the adoption of deeply rooted traditional practices that are potentially hazardous to health should be a public health priority in northern Uganda. It was observed that an initiative involving role-plays, didactic presentations and discussion/debate workshops to 23 women's groups in 15 communities in a community of 1874 women exposed to the practise of Ibino were carried out and after 1.5 years of the programme's inception, community awareness of the scientific causes and alternatives to ebino extractions increased (as gauged by follow-up focus group discussion findings) and the number of hospital admissions for traditional tooth extraction complications reduced. (Jamieson, 2006).

Some other common traditional oral health practices in Africa include extraction of primary canine, removal of lower central incisors in adults, brushing of children gingival with fresh herbs and cosmetic hole-drilling of upper lip of girls for cosmetic dressing (Ogunbodede, 1991).

TH in Primary Health Care/Disease Prevention

The African traditional medicine is directly linked to the socio cultural aspects of their community making them highly respected and influential (Diouf, 2013) and as such effective agents in the promotion of primary health care.

The TH own experience, added to the accumulated knowledge handed down by their ancestors and training, allow the TH to offer cheap, but effective remedies for treating the main ailments that afflict the populations of the African; operating under a philosophy that requires a TH to provide health services under a "humanity first" consideration and not for material gain (Mhame, 2010). There are many philosophical terminologies in African culture, used to describe a TH as a person of high standing in a community, open and available to serve others, when they need health care services (Mhame, 2010).

Traditional health care services are practiced in accordance with *ubuntu* philosophy (an African ethical or humanist philosophy focusing on people's allegiances and relations with each other. *Ubuntu* philosophy requires TH not to provide services for material gain. TH are therefore obliged to provide health care services to their patients without demanding any charges. This taboo imposes on the practitioners a strong code of ethics in the provision of health care services to which they should always abide. This places a huge responsibility on the TH to demonstrate a high sense of "professionalism" and integrity in the discharge of their work (Mhame, 2010).

Traditional healers (TH) are considered to be effective agents of change as they command authority in their communities, function as psychologists, marriage and family counsellors, physicians and legal and political advisors (UNAIDS, 2002). They are also the legitimate interpreters of customary rules of conduct, morality and values. TH provide client-centred personalized health care that is culturally appropriate and tailored to meet the needs and expectations of the client paying special respect to social and spiritual matters (Abdool Karim, 1998).

According to Maynard who has carried out much research on traditional medicines in Cameroon, "western society has no one quite like today's traditional healer; a doctor in sickness, a priest in religious matters, a lawyer in legal issues, a policeman in the detection and prevention of crime, a professor of herbs and an alchemist of magical powers" (Maynard, 2004). All the above qualities of TH make them effective agents for primary oral health care and oral health promotion.

Prior to the introduction of the cosmopolitan medicine, TM used to be the dominant medical system available to millions of people in Africa in both rural and urban communities. Indeed, it was the only source of medical care for a greater proportion of the population (Romero-Daza, 2002).

Traditional medicine is assuming greater importance in the primary health care of individuals and communities in many developing countries (Peltzer, 2006; WHO, 2002). These approaches to health care belong to the traditions of each culture, and have been handed down from generation to generation (WHO, 2002; WHO, 2001). In fact, TM reflects the socio-religious structure of indigenous societies from which it developed, together with the values, behaviours and practices within their communities. Traditional medicine ultimately aims at restoring the physical, mental and social wellbeing of the patient, through alternative health care delivery to the orthodox medical system (Diouf, 2013).

Because of the above reasons, tribes, cultures and indigenous people of nations throughout the world have evolved system of traditional medicine for generations, and communities have found most of these medical practices valuable and affordable and still depend on them for their health care needs. The WHO estimates that about 60% of the world's people uses herbal medicine for treating their sicknesses and up to 80% of the population living in the African region depends on TM for some aspects of primary health care (WHO, 2001; WHO, 2005). Indeed, in rural communities in developing countries and elsewhere, traditional medicine will continue to remain a vital and permanent part of the people's own health care system (Abdullahi, 2011; Gyasi, 2011).

In most African countries, TH are primarily involved in primary health care delivery. The World Health Organization has estimated that traditional health care providers in developing countries provide primary health care needs for 80 percent of the rural populations. Traditional medicine has also been regarded as a means of improving primary health care (Hoursi, 1986) and the efficacy of many African traditional practice have been re-assessed to meet most of the psycho-social needs of the population not addressed by biomedical medicine (Kirkland et al. 1992; Bannerman et al. 1983).

However, people who seek traditional medicine treatment are more likely to have chronic complaints and to have seen several doctors. These results suggest that THs are a last resort for patients with long term health problems, who may be unhappy with the outcome of biomedical treatment. In general, primary health care consultations are free, but very short, with little time to discuss symptoms or their causes (Mhame, 2010). In some instances, patients use TM simultaneously with modern medicine in order to alleviate sufferings associated with disease and illness (Abdullahi, 2011).

Kayombo and colleagues (2007) have reported that the involvement of oral health into the primary health care system is still minimal (Kayombo et al. 2007). They stated that the key essence for the 2 systems to work together is based on the principles which underpin this collaboration which include mutual respect and awareness of limits of competence and voluntarism (Kayombo et al. 2007). Based on these principles, in some countries traditional healer have been trained and also found to collaborate with their biomedical counterparts making them useful in primary health care delivery as counsellors, peer educators in the community. There have been many instances where traditional healers have collaborated with the health sector (Kayombo et al. 2007). Wilkinson et al.

(2001) investigated the potential for TH to act as tuberculosis (TB) treatment supervisors. Although only four per cent of the study population believed that traditional healer could cure TB, 84% stated that they would consider choosing a healer as a treatment supervisor. Eighty eight per cent of healers reported having referred patients with suspected TB to hospitals for treatment and all the healers were keen to collaborate with health services and to act as treatment supervisors (Wilkinson et al. 2001).

Agbor and Naidoo (2011) identified some barriers to primary care oral health care in Cameroon and proposed that in view of the fact that factors affecting the oral health seeking behaviour of patients cannot be easily removed in a short term. They proposed that a multi-sectorial population based primary health care approach may be an option to break down some of these barriers. This should be based on an empowerment model which will integrate basic oral health care to all aspects of health care at PHC level equipping TH with tools that that can assist them with the diagnosis and recording of oral disease, with appropriate referrals. They suggested that because TH has close contact with the community and simple basic dental practice applications like the Basic Package of Oral Care (BPOC) can be inculcated into their practice. They may also play a role in educating the community on the use of fluoride in the prevention of dental caries (AFT), restoring teeth using the atraumatic restorative (ART) and minimal invasive (MIT) techniques and carrying out emergency care by simple extractions (Agbor and Naidoo, 2011). They concluded that traditional healers could also serve as a referral point to specific oral health facilities as 2/3 of the referrals observed in their study were directed to medical doctors (Agbor and Naidoo, 2011).

To enhance primary health care in Africa, collaboration between TH and biomedicine has been proposed since it is particularly important to involve traditional healers because they are significant providers of health care in communities. Reaching a consensus on how to merge the objectives of TH with that of the public oral health system could lead to improved equity, increase primary health coverage and may prevent the duplication of functions (Kayombo et al. 2007; Wilkinson et al. 2007; Rudolph et al. 2007). Studies have reported that traditional healers are willing to co-operate with oral health workers in improving the oral health of their patients. Mutual cooperation, collaboration and integrating TH into primary oral health care services need to be increased (Agbor and Naidoo, 2011; Hillenbrand, 2006). Barriers to collaboration has been attributed to the attitude of biomedical workers who see TH as inferior and not well trained in the delivery of oral health care (Agbor and Naidoo, 2011).

TH and Health Promotion/ In Community/Oral Health Policy

Currently in many countries there exists a contradiction between personal choices and public policies with respect to health care involving traditional medicines. While on the one hand the public at large actively integrate various health systems for a variety of reasons such as access, cost, efficacy, convenience, ethical and moral reasons, the policy and institutional mechanisms are slow to address various issues related to such integration (Van der Geest et al. 1990).

Homsy and King (1996) in a study concluded that traditional healers could be trained as counsellors and educators to disseminate HIV/AIDS information and prevention practices between their peers and communities (Homsy et al. 2004). Case studies indicate that traditional healers are capable of performing at least as well as their biomedical counterparts as AIDS educators and counsellors. Of concern to Homsey and King (1996) however, was the failure of many projects to provide systematic follow-up to healers after their initial training (Homsy et al. 2004). Such follow-up is essential to support healers in dealing with unfamiliar issues such as condom use and death and dying (Homsy et al. 2004). Masauso Nzima et al. (1996) carried out a similar study in four Copperbelt towns in Zambia whereby traditional healer received AIDS training and how to counsel clients on safe sex behaviours, together with follow-up monthly meetings (Masauso Nzima et al. 1996). It has been suggested that if TH could identify common oral manifestations of HIV/ AIDS, they can serve as referral points for patients with HIV/AIDS to the main stream health care system (Agbor and Naidoo, 2011, Rudolph et al. 2007) and also as oral health counsellors/educators who could identify common dental problems and do the appropriate referrals (Agbor and Naidoo, 2011) and as well educate the community on oral health diseases.

Identification of Research Gaps

1. Little research has been done on integration of TM into the oral health care systems of many African countries.
2. A few researches have been done to evaluate the treatment outcome of traditional medicine in dental care.
3. Few studies have been done on the laboratory analysis of medicinal plant used for TM and the biological effects.

Suggest Perspectives for Future Research

1. Evaluation of policies involving traditional healers in oral health care delivery in Africa.
2. Evaluation of the impact of traditional healers in oral health care delivery in all African countries.
3. How to make African traditional medicine safer and fully involved in primary health care.
4. Inclusion of data on traditional medicine in national oral health surveys.

Conclusion

Western religions, education, urbanisation and globalisation in Africa have not affected the continuous existence of African traditional medicine as practiced in both urban and rural areas because it is easily accessible, available, acceptable, affordable, dependable and culture oriented taking care of the health needed of both educated and uneducated Africans.

Irrespective that TM faces challenges at different levels, TH because of the role in the community have been found to be useful agents for primary oral health care and oral health promotion.

Therapeutic methods used by African traditional healers include herbalism, psychotherapy, simple surgical procedures, rituals and symbolism. TH us medicinal plants for plaque control, tooth ache, dental tooth extractions. Some oral surgical procedures carried out by TH are harmful. Collaborating with biomedicine will remove barriers, increase oral health coverage with appropriate referral, increase quality oral care and limit some harmful effects of TM.

Some research gaps and perspectives for future research were identified.

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SN made substantial contributions to the conception and design and in the drafting and revision of the manuscript. All authors read and approved the final manuscript.

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