Original Article

Exploring the contribution of indigenous medicine to primary healthcare in West Belesa District in northwestern Ethiopia: A qualitative analysis

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Abstract

Background: This study explores the contribution made by indigenous medicine to primary healthcare services in West Belesa *Woreda* (District) in northwestern Ethiopia.

Objective: The study aims to examine the practices of indigenous medicine in three communities in West Belesa *Woreda*, the perceptions of its use and efficacy among indigenous medical practitioners and biomedical healthcare practitioners, and their views on its role in primary healthcare.

Methods: Qualitative research, including in-depth interviews, focus group discussions and direct observation, using an ethnographic design, was conducted from February to April 2017. In total, 16 key informants were interviewed and six focus group discussion sessions were held. Thematic analysis was undertaken to analyze the data.

Results: The local pluralistic healthcare system employs both indigenous medicine and biomedicine, often in combination. However, indigenous healing is generally the first choice due to its greater availability, affordability, and cultural acceptability. Malaria, intestinal worms, diarrhea, stomach ache, gastritis, wounds, snake bites, and epilepsy are commonly treated by herbalists with medicines prepared from plants and plant products. Illnesses that are perceived to be due to *buda* (evil eye) and spirit possession are mostly treated with *tsebel* (holy water), prayers and spirit exorcism. The findings also show that most modern healthcare providers have negative perceptions towards indigenous medicine, mainly because it lacks standards for prescribing medications. On the other hand, some beneficiaries of indigenous medicine asserted that indigenous healers provide better primary healthcare for spiritual illnesses and bone fractures.

Conclusions: Understanding the cultural context of health, illness, and healing, and the involvement of indigenous healers in primary healthcare, may facilitate the provision of compatible treatments consistent with Amhara cultural and religious traditions and the integration of indigenous medicine and biomedicine. [*Ethiop. J. Health Dev.* 2020; 34(3):191-204]

Key words: Indigenous medicine, primary healthcare, qualitative analysis, Ethiopia

Introduction

The use of indigenous medicine in primary healthcare continues to be widespread in many countries. The World Health Organization estimates that most people in developing countries rely on indigenous medicine, mostly of plant origin, to meet their primary healthcare needs (1,2). Indigenous healers play an important role in primary healthcare systems, particularly in rural communities, where they treat and support people who have little access to hospitals and health centers, and cannot afford the cost of modern medicine (3-5). The development of indigenous medicine constitutes an important public health issue worldwide because of its ubiquity (2).

Scholars attribute the persistence of indigenous medicine in Africa to several factors, including various assumptions about its efficiency, reliance on natural products, the belief that indigenous healing practices are compatible with people's religious and cultural values, and the accessibility of indigenous materials (6-11). Although most people in Africa depend to varying degrees on indigenous medicines, especially those prepared from medicinal plants, for their healthcare needs, the types of plants employed and how they are prepared and used have not been conclusively documented (12). Much of the indigenous knowledge on remedies in many African countries, including Ethiopia, is secretly passed verbally from one generation to the next (13). According to Cunningham (14) and Bishaw (15), indigenous medicine is impeded by a lack of institutional support for the production and dissemination of key species for cultivation, a lack of appropriate technology for post-harvest processing and storage, and insufficient documentation of the efficacy of plants in medical treatment.

Ethiopia relies heavily on indigenous medicine for its primary healthcare needs due to cultural, geographical, and socioeconomic factors. Ethiopia has a rich history of many indigenous medical practices and healing systems linked to its diversified cultures and ecological zones (16). A number of surveys indicate that up to 80% of the Ethiopian population uses indigenous medicines (1,17,18). However, policy gaps and a lack of guidelines for systematically developing, promoting and integrating indigenous medicine into primary healthcare constitute major hindrances (19). Major challenges for the collaboration between indigenous and modern health practitioners are mistrust and negative attitudes towards each other's practices (17).

According to Pankhurst (20), the majority of the Ethiopian population has for centuries relied heavily on a system of indigenous healthcare knowledge to treat physical and mental disorders. Even with the expansion

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of modern health services, social and cultural factors maintain preferences for indigenous medicine for many illnesses. The practices of indigenous medicine vary among communities and are based on local customs and traditions. The cultural and religious context of indigenous medicine used by the Amhara ethnic group has been described by several anthropologists (21,22-26). In general, Ethiopian indigenous medicine is concerned not only with curing diseases, but also with the protection, promotion, and/or the manifestation of human physical, spiritual, social, mental, and material wellbeing (17). For illnesses attributed to supernatural forces, healers frequently combine magico-religious rituals and empirical techniques in their curative strategies. Religious beliefs, customs, and health-related values tend to perpetuate the utilization of traditional healing systems, reflecting the compatibility of indigenous medicine with deeply engrained traditions (22,24,26,27).

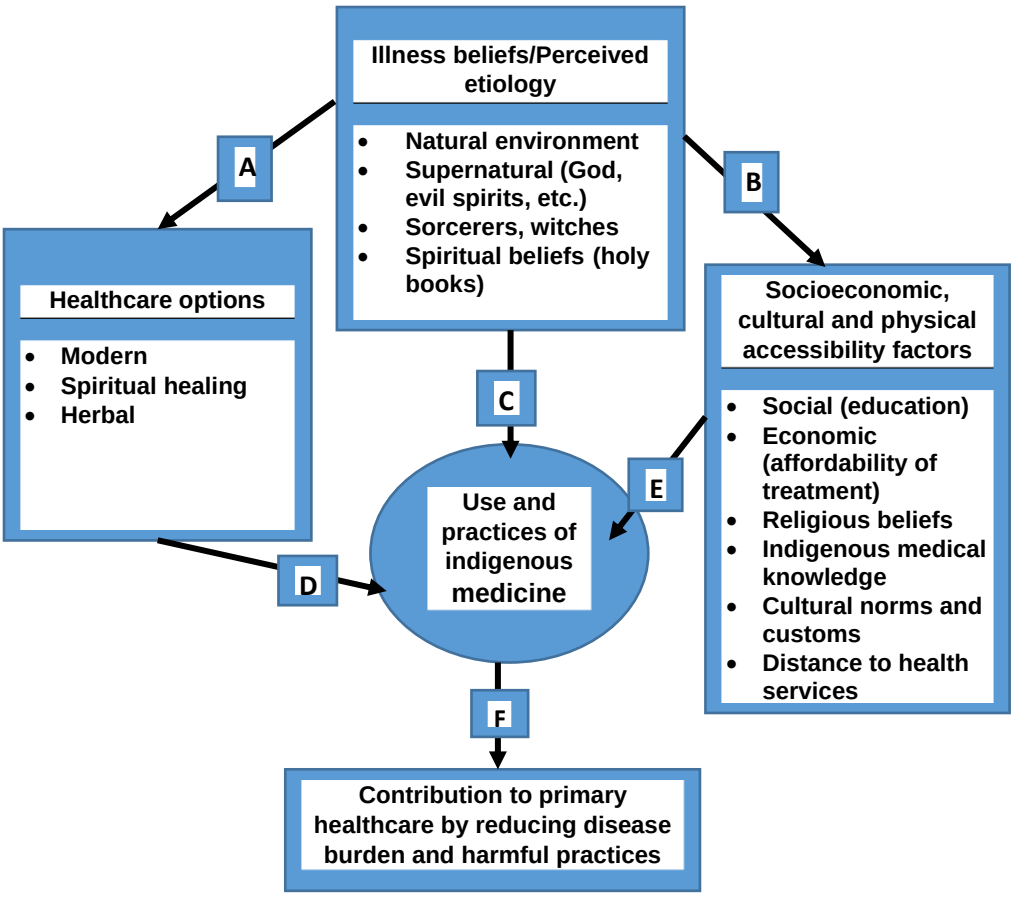
However, Ethiopian indigenous medical knowledge systems are poorly understood due to a lack of documentation. Most of the knowledge of indigenous medicine is passed verbally from one generation to the next with great secrecy, and an indigenous medicinal practitioner may die without having passed his/her knowledge onto others (12,19). Among the Amhara, studies have revealed that the use of indigenous medicine is deep-rooted in their cultural practices, historical events, and the context of surrounding landscapes, requiring an ethnographic approach (22,24). There is a gap in the literature regarding the role of indigenous medicine in primary healthcare among the Amhara people. Although previous studies provide useful insights into Amhara indigenous medicine in terms of the ethnobotanical and therapeutic values of medicinal plants (28,29), they do not examine in depth the role of indigenous medicine in primary healthcare. The existing studies do not reveal in detail how indigenous medicine contributes to the prevention and treatment of the primary healthcare activities, in spite of the fact that indigenous healing practices are compatible with people's religious and cultural values. Only one qualitative ethnographic study examines illness perceptions among residents of several Muslim communities in northern Ethiopia (30). Our paper describes illness perception and treatment practices largely from the indigenous healers' perspective and the contribution of indigenous medicine to the primary healthcare services of Orthodox Christian communities in West Belesa *Woreda* in Amhara Region.

Although the health and drug policies of the Ethiopian Ministry of Health promote the integration of traditional medicine into primary healthcare, the government's efforts have achieved only limited results (17). A better understanding is needed of the interactions between traditional and modern healthcare systems towards the development and implementation of comprehensive primary healthcare services and the prevention of illegal and dangerous practices (27). To our knowledge, only one recent study describes the contribution of traditional healers to public health (31). That study was health facility-based, and excluded both patients who did not use the healers' clinics studied, as well as modern health practitioners. In our study, we included both traditional and modern healers, as well as more representative patients in examining the actual and perceived contribution of indigenous medicine to the primary healthcare services in one urban and two urban *kebeles* in West Belesa *Woreda* in Amhara Region.

Analytical framework of the study

The analytical framework of the study (see Figure 1) shows the links between illness beliefs, healthcare options, socioeconomic, cultural and physical accessibility, and the utilization and practices of indigenous medicine and, in turn, their contribution to primary healthcare in the study area. It also clarifies the objectives by identifying the major factors affecting the use and practices of indigenous medicine and its relationship to primary healthcare services. It thus presents a road map for answering the research questions and analyzing findings of the research using the symbolic and political economy approach (32,33). Arrow 'A' illustrates the influence of beliefs and perceived illness etiology on the choice of healthcare options; arrow 'B' shows the interrelationship between beliefs/perceptions and socioeconomic, cultural and physical accessibility; arrows 'C', 'D', and 'E' show the influence of these various factors on the utilization and practices of indigenous medicine, and on the decisions regarding given healthcare options and the socioeconomic and cultural factors of healthcare. Arrows 'B', 'D', and 'E' point out how the combination of these components positively influences the use and practices of indigenous medicine, and arrow 'F' indicates their contribution to primary healthcare.

Figure 1: Analytical framework of the study

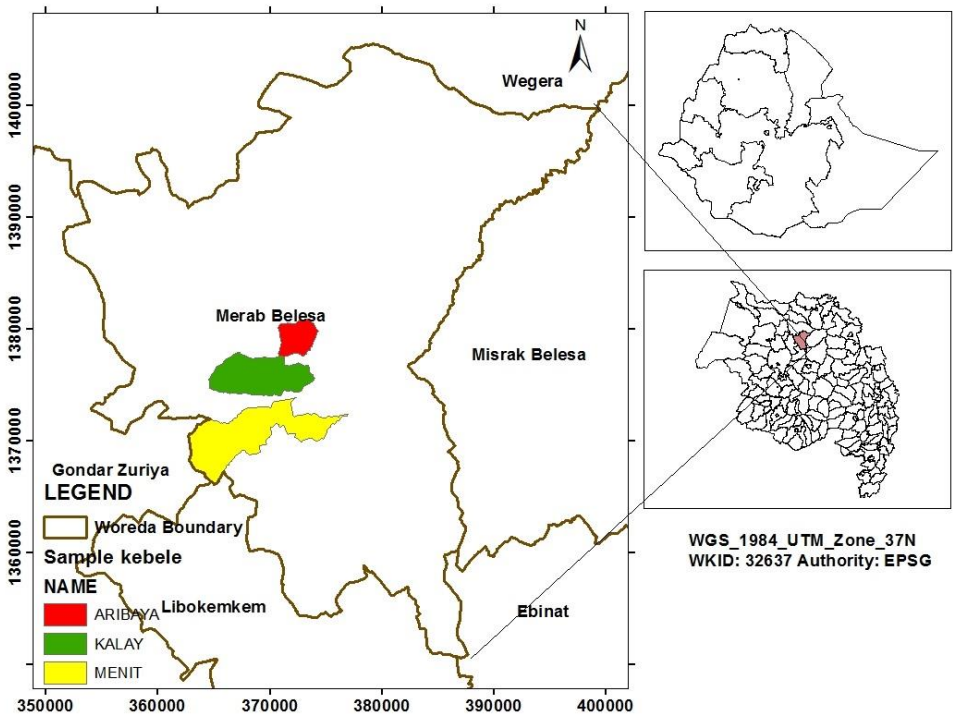


Source: Authors, 2020

Methods

Study area: The study was conducted in West Belesa *Woreda* from February to April 2017. West Belesa is a *woreda* in North Gondar Administrative Zone in Amhara Regional State (see Figure 2).

Figure 2: **The study area**



According to the 2007 national census, the population of West Belesa *Woreda* was 142,791, with 51% males and 49% females. It contains two urban and 20 rural *kebeles*. The vast majority (95.3%) of the population follows Ethiopian Orthodox Christianity and 4.5% practice Islam. Amharic is the dominant (98.2%) language (34-36). Religious beliefs greatly influence indigenous medical beliefs and practices, including spiritual healing. West Belesa *Woreda* is located at an altitude of between 1,500 and 2,000 meters above sea level; the climate is tropical semi-arid to sub-humid, characterized by unpredictability of seasonal rainfall and periodic drought conditions (36-39). Thus, the population faces periodic food insecurity, as well as a number of infectious diseases, including malaria (40).

Both biomedical and indigenous medical systems are widely used in West Belesa *Woreda*. Biomedical healthcare services are provided by three government-run health centers and two health posts, as well as by two private clinics (37,41). The health posts and private clinics lack medical equipment, drugs, and skilled manpower. Many indigenous healers (herbalists, spiritual healers, and bone-setters) work in the study area, and most households are acquainted with the commonly used remedies.

Study design and sampling: In this study, we employed a qualitative approach with the objective of gathering in-depth information on the medical beliefs, perceptions, and practices of the research participants, and the role of traditional medicine in primary healthcare. The research participants included *medhanit korach* (herbalists), *debteras (religious scribes)* and *yehaymanot abatoch* (religious healers), and patients receiving indigenous medicine, and biomedical healthcare providers (doctors, nurses, and health extension workers) of different ages and both genders. We selected these research participants purposively.

Two rural *kebeles* (Kalay and Menit) and one urban *kebele* (Arbaya) were included in the study to evaluate access to indigenous healers and biomedical healthcare services. We purposively selected these *kebeles* to compare and contrast the perceptions and uses of indigenous medicine in these communities, and to evaluate the implications of the findings for primary healthcare (see Figure 2).

Key informants and research participants were selected purposively from the target populations in each study *kebele*. This sampling technique supports data collection from research participants who are knowledgeable about the local culture and health-related practices. A total of 65 study participants (38 males and 27 females), including *debteras*, herbalists, biomedical healthcare practitioners, and community members, were selected for both in-depth interviews to elucidate *debteras*' views about illness perception, healing practices and acquisition of knowledge, and FGDs in addressing the perceptions of the local community about indigenous medicine. Research participants were recruited with the help of officers in the *woreda* Culture and Tourism Office, as well as respected local elders. These individuals acted as gatekeepers by identifying eligible participants from the local communities. In identifying indigenous healers, West Belesa *Woreda* Culture and Tourism officers helped us in contacting indigenous healers. The healthcare workers were identified by the first author through formal communication with the *woreda* health administrators, which was facilitated by a consent letter from the College of Social Sciences and Humanities, University of Gondar.

The inclusion criteria of the participants were based on age (older than 18 years), gender (inclusion of both genders in equal proportions), and participants who were said to be knowledgeable about the local culture.

Data collection methods: Data collection took place during several site visits to West Belesa *Woreda*. Data collection methods included direct observation, in-depth interviews, and focus group discussions (FGDs). The participants included *medhanit korach* (herbalists), *debteras* and *yehaymanot abatoch* (religious healers), indigenous medicine beneficiaries, and biomedical healthcare providers (doctors, nurses, and health extension workers) of different ages and both genders.

Nineteen in-depth interviews were conducted. Twelve interviews were held with local practitioners of indigenous medicine (three herbalists, two *wogeshas* (bone setters), two religious healers) and five beneficiaries. Seven interviews were held with biomedical healthcare practitioners (two doctors, three nurses, and two health extension workers). Each in-depth interview took on average one and a half hours. Some of the topics covered in the key informant interviews were perceptions about the role of indigenous medicine and the significance of its integration with the biomedical healthcare system, beliefs about causes of illness, the procedures for practicing indigenous healing, and the challenges faced by indigenous medicine. Data were also collected in Arbaya and Menit towns and in Kalay rural *kebele* via six FGD sessions with participants separated by sex, age, occupation, and profession. Each discussion group had six to eight participants, and a total of 46 people participated. We purposively selected FGD participants who had similar cultural backgrounds. Both key informant interviews and FGDs were conducted in the local language (Amharic). With the consent of the participants, an electronic audio recorder was utilized during the key informant interviews and FGDs.

Throughout the fieldwork, the first author, who is the insider of the researched community, assumed the role of direct observer of events, practices, and the day-to-day activities of the people in order to contextualize how they perceived and conceptualized the indigenous healing practices. He also observed how to diagnose and determine the development of illnesses. The observations provided information on the type of healing practice carried out and how medicines were administered (orally, topically, or by inhalation), as well as health-related activities in the local community. This information was recorded as mental notes at the observation sites and then recorded on paper. In the in-depth interviews with indigenous healers, we obtained information on how they acquire their knowledge. By using FGDs, we gathered data about the local community's and healthcare workers' perceptions of indigenous healthcare.

Data analysis: An inductive thematic method of analysis was used, which allowed for flexibly identifying, analyzing, and reporting patterns (themes) of the data (40). The four themes that guided the study design and analysis were indigenous medical knowledge transmission; indigenous medical practices and utilization patterns; local community's knowledge and perceptions of indigenous medicine; and biomedical healthcare practitioners' perceptions of indigenous medicine. Data were first transcribed verbatim in Amharic and then translated into English for data analysis. English language experts verified the translations of Amharic into English. Early coding was carried out primarily in Amharic and involved multiple readings of the content, which were followed by detailed coding and sub-coding around emerging themes. Areas in the original transcripts and key quotes thought to be illustrative were identified. All qualitative data from participant observations, in-depth interviews, fieldwork, personal memos, and informal conversations were organized thematically and analyzed.

Data quality assurance: The study used various criteria to assure the quality of the qualitative data. Some of the criteria were trustworthiness, credibility, and conformity (41,42). The first author tried to ensure reliability and credibility by triangulation with multiple methods of data collection, thereby enhancing the validity of the study. Representativeness of the research findings was confirmed by knowledgeable research participants and language interpreters. To ensure the reliability of the data, we used a conceptual framework based on multiple qualitative methods (observation, FGD, in-depth interview).

Results

This section describes indigenous medical knowledge transmission, indigenous medical practices and utilization, and the perception of the local community and biomedical healthcare practitioners regarding the use of indigenous medicine among the local people.

Indigenous medical knowledge transmission: Indigenous healers in West Belesa have a variety of beliefs and explanations about how they acquire their medical knowledge and how to pass it on from one generation to the next. Interviews and field observations confirmed that indigenous healers linked the acquisition of their healing knowledge to religion. Information obtained from a key informant interview with a 47-year-old male herbalist indicated that he believed only God possesses healing wisdom. He explained that he had acquired some of his knowledge on medicinal herbs from God through dreams. Another herbalist was reluctant to share his everyday experiences, saying:

"Oh! My son, what could you learn from me, an old poor man like me with no education? You know, I am illiterate and what do I know other than farming?"

However, later, when we explained to him that we were interested in learning from him, he laughed and said:

"Okay! Let me tell you what I know… Of course, it is a long story… You know, my ancestors from many lineages had been already blessed by *wurs* [genetic inheritance] and had the wisdom of healing different ailments. We have a heritage of wisdom of indigenous healing. And as my father told me, they acquired the knowledge in the form of dreams and communicated with their dead ancestors. Then, this practice was passed on from generation to generation. I have also been blessed by *wurs*, because my father told this secret wisdom only to me, although I am the third son in the

family. When I become purified, sometimes my dead ancestors inform me about how the spirits of water, trees, sky, and land have an effect on human health and how I should use different herbs, blessings, and rituals." [Male herbalist, 73, Menit *Kebele*, March 21, 2017]

Indigenous healers in West Belesa have acquired their indigenous medical knowledge from different sources and have shared it with designated successors. Additionally, most of the FGD participants agreed that knowledge of indigenous medicine is given to humankind by *fetari* (God), and that being selected to receive such knowledge is being blessed by *fetari.*

Some indigenous healers were asked to describe their perceptions of the origin, foundation, and value of indigenous medicine. One *debtera* informant explained:

"In Menit, there are myths of Genesis. *Wurs* is portrayed as possessing the totality of knowledge, which is then transmitted orally to another selected and blessed individual, who in turn abbreviates it and passes it onto another sainted person, who again abbreviates it and passes it on, until it is finally reduced to a size that can be memorized and understood." [Female *debtera*, 60, Menit *Kebele*, March 13, 2017]

With respect to the way healers pass on their indigenous medical knowledge from one generation to the next, the transmission usually occurs through family structures. For example, a well-known herbalist in Arbaya Town said:

"I learned my healing wisdom from my mother and, similarly, my mother had learned from her father. In my turn, I am also thinking and trying to transfer my skills to my children before I pass away. Unfortunately, all my sons and daughters, except one, are not active, wise, or willing to learn as hard as the profession requires. I have only one son who is active and interested to acquire the knowledge. Now, he is following my tradition. When I collect medicinal plants, I show him everything." [Male herbalist, 52, Arbaya Town, March 14, 2017]

The inter-generational transfer of indigenous medical knowledge is possible because of the involvement of sons and daughters in the family as facilitators, helpers, and companions of indigenous healers. This involvement not only facilitates transfer of the knowledge, but also provides a unique opportunity for people to learn about plant medicines from their families. According to several informants, a healer typically transfers his knowledge of indigenous medicine to one of his sons, who is chosen based on his moral 'qualifications' and skills. Knowing the wisdom of indigenous healing was said to be dependent on one's ability to recall the uses of different medicinal plants. One herbalist noted:

"You can keep knowledge about different medicines in your memory and the way you are going to apply it. Skillful children are taught while growing. Our father, for example, taught only me and not all my brothers and sisters. My father knows who in the family should be trusted and is skillful to be given knowledge of medicine; you know, there is always one child who is liked more than the others, and is the one who is given everything to help others." [Female herbalist, 46, Arbaya Town, April 14, 2017]

On the other hand, some healers are naturally skillful and interested in learning about indigenous medicine. For example, a female herbalist explained that she began learning about indigenous healing because of personal interest:

"I was interested in learning about indigenous medicine when I lived with the healer, who was my uncle. I stayed there for some 16 years and got training from him. I learned about healing, protecting, and collecting medicines." [Female 60, Menit *Kebele*, April 17, 2017]

These data reveal that knowledge transfer involves learning by doing, and that the opportunity of learning by observation reinforces the apprentice healer's interests and skills.

Indigenous medical practices and utilization patterns: Indigenous healthcare practitioners in West Belesa *Woreda* follow various steps and procedures when practicing indigenous medication. All healers agreed that the first step in the healing process is identifying the cause of an illness. Diagnosis usually entails the examination of the eyes, nose, nails, mouth, and other parts of the body. Observations indicated that they also gather information from the patients and their family members regarding patients' symptoms and possible causes of illnesses before starting treatment.

The treatments used by healers in West Belesa *Woreda* vary greatly according to a healer's medical knowledge and skills, as well as the nature of a patient's illness. According to a 67-year-old male *debtera*, the treatment process is comprehensive and has curative, protective, and preventive elements; it can proceed along either natural or ritual lines, or both, depending on the cause of the illness. Medicines derived from plants may be drunk as herbal decoctions, ingested through inhalation, or administered via vaccination (dermal incisions), enema, massage, bathing, or fumigation. The parts of the plants are prepared in a variety of ways. For example, leaves and bark are mashed and pounded.

Indigenous healers in West Belesa follow prescriptions that have been handed down to them for the proper ingredients of medicines. Most medicines contain between five and 10 ingredients. For each ingredient, the prescriptions usually specify which plant part should be used and in what quantity. According to one *debtera*, there is a set of specific operating procedures and ritual practices in harvesting each medicinal plant:

"Each *etsi* (plant), based on its use, requires specific ritual procedures when harvested. These procedures involve various aspects, such as harvesting time; tools to be used; people involved; certain songs and prayers; and specific methods involved in processing, storing and administering it. For example, the harvesting has to be done either early in the morning, during sunrise, or before eating food. There are also important songs or

blessings used for rituals while collecting herbs to ensure effective harvesting. The song praises the ancestors by mentioning their names, and it elicits their approval. In some cases, there is also a ritual of slaughtering, either a black goat or chicken, for harvesting medicinal herbs that requires the use of blood from animals." [Male *debtera*, 65, Kalay *Kebele*, March 13, 2017]

When he was asked why certain rituals are performed, this healer responded:

"Before the medicine is given to the patient, different rituals, such as blessings, need to be bestowed on the medicine to make it effective and potent for its intended use. After processing different medicines, all of them will be collected and placed together. The medicines will be mixed with important additives that do not limit but enhance their potency." [Male *debtera*, 65, Kalay *Kebele*, March 13, 2017]

Similarly, an elderly herbalist in Arbaya Town argued that specific parts of plants, including roots and root bark, bark and stems, latex and sap, leaves, buds and flowers, and seeds, should be used for medicinal purposes, depending on the type of plant. He explained that the parts of a plant used, as well as their growth and reproductive characteristics, have important implications for their harvest (for example, seasonality) and their vulnerability to over-exploitation.

According to herbalists in the FGDs, many different ingredients of indigenous medicines are – consisting of a mixture of both animal products (such as butter and honey), and the crushed leaves of *Taverniera abyssinica*, known in Amharic as *dingetegna* – cure internal parasites. The crushed root of *kitikita* (*Dodonaea angustifolia*) and the bark of *bisanna* (*Croton macrostachyus*) mixed with honey are used to treat stomach ache and wounds, respectively. Data obtained from focus group participants indicated that, if fresh plants are not available, dried plant parts are frequently used with success, and are sometimes prepared in the same way as fresh plant parts.

The modes of application and administration of indigenous medicines vary. Some medicines are ingested as decoctions and infusions. Others are applied directly as poultices or rubs and lotions, enemas, eye drops, or nasal drops. Indigenous medicine, therefore, can be prepared in the form of powders, porridges, soups, ointments, smoke, and liquids, and can be drunk, ingested, inhaled, painted, massaged, or bathed in.

Interview participants shared the view that several indigenous practices can be used to heal various health problems. The major health problems in West Belesa identified by male indigenous healer participants in a focus group discussion are malaria, wounds, hepatitis B, snake bites, diarrhea, gastric problems, typhus, typhoid, evil eye, spirit possession, and epilepsy. A 43-year-old male herbalist explained in an interview that he knew some of the medicinal plant species for treating various diseases. He claimed to be an expert in curing snake bites, stomach ache, gastritis, spirit possession, and evil eye. For snake bites, he uses the root of a plant locally known as *zigitta* (*Calpurnia aurea*). He dries the root of this plant, grinds it, and mixes a spoonful of the powder with water. He gives one teaspoon of the mixture per day to the patient, resulting in vomiting, which expels the poison. Furthermore, a mixture of garlic, ginger, *tikur azmud* (*Nigella sativa*) seeds, and *tena adam* (*Ruta chalepensis*) is boiled and the infusion is taken orally for stomach ache. Similarly, an elderly, female, key informant herbalist said that a medicine for malaria is prepared by grinding and mixing ginger, garlic, and *tikur azmud*, which the patient drinks.

Various other herbal remedies are used for stomach ache, including chewing the roots of *Aruba*, called *imbway*, or cooking the roots and drinking the infusion. A mixture of garlic, ginger, and *dingetegna* (*Taverniera abyssinica*) can be boiled and the infusion taken orally for gastritis. In addition, informants suggested that the most serious disease in the West Belesa community, which cannot be easily cured by biomedical treatment and for which indigenous medicine is said to be better, is locally called *yewof beshita* (hepatitis B). A 61-year-old female herbalist reported that most of her clients were hepatitis B patients; the main symptom of this illness is the yellow color of the patient's eyes and fingers. When treating hepatitis B, she uses a mixture of *gizawa* (*Withania somnifera*), *tena adam* (*Ruta chalepensis*) and *nech shinkurt* (garlic). She digs their roots in the morning before she eats any food and heats them in boiling water. She said that drinking the liquid frequently cures this disease.

Direct observation indicated that indigenous healers in West Belesa *Woreda* also practice spiritual healing through different rituals. Religious practices, such as praying and going to church, play a large part in the healing process. Holy water (called *tsebel* in Amharic and *zemzem* by Muslims) is also frequently used for various spiritual illnesses. Holy water is found near most churches in the study area.

According to informants, immersion in *tsebel* is important for followers of Orthodox Christianity seeking healing from aliments related to *buda* (evil eye) and evil spirits. Many people in West Belesa *Woreda* use *tsebel* and amulets for *buda*. According to Reminick (25), the term *buda* denotes the power to curse, destroy, and reincarnate, harnessing the labor of the dead for one's own needs. The local herbalists put the root of *kitikita* (*Dodonaea angustifolia*) on a fire and make the afflicted person smell it. Some of the herbal medicines that were said to be widely used in West Belesa *Woreda* are listed in Table 1.

Table 1: **Some commonly used medicinal plants in West Belesa *Woreda***

Local name	Scientific name	Plant part used	Used for	Preparation
Bisanna	*Croton macrostachyus*	Stem	Stomach ache	Grind stem into powder and mix with water – drink one teaspoon of the mixture
Feto	*Lepidium sativum L.*	Seeds	Gastritis, febrile conditions	Grind one cup of seeds and boil together with one piece of garlic and one spoon of butter in a small amount of water and take orally before breakfast
kitikita	*Dodonaea angustifolia*	Root	Evil spirits	Dry the root, burn it, and inhale the smoke
Fashayta	*Vernonia amygdalina*	Leaves	Malaria, intestinal parasites and stomach ache	Powdered leaves are taken orally – one teaspoon with honey
Papaya	*Carica papaya*	Fruit	Stomach ache	Crush the fruit together with garlic and *moringa* leaves – drink a cup every morning
Tena adam	*Ruta chalepensis*	Leaves and fruit	Fever, evil spirits and stomach ache	Boil in *wot* (sauce) and eat the sauce and also drink in the form of tea
Hanssappitta	*Ocimum lamiifolium*	Leaves	Evil spirits	Take fresh leaves and grind in a cup of water with half a gram of garlic and take orally
Qora maga	*Senna obtusifolia*	Leaves	Evil spirits	Wash the whole body with the leaves of *Senna obtusifolia* o purify the patient
Xallala	*Afzelia quanzensis*	Leaves and root	Evil spirits	Burn the root and put the leaves and roots at the gate of the house to repel evil spirits
Argeesaa	*Aloe sp.*	Leaves	Devil and evil spirits	Put the leaves on the roof and outside the house to repel the devil and evil spirits

One female indigenous healer said that patients who have been affected by evil spirits should be given herbal medicine by their unmarried young daughters or sons, because it is believed that the spirits like young people. She said she uses herbal remedies to treat illnesses perceived to be caused by evil spirits, but did not want to mention the names of the herbs she uses in her mixtures. Her most commonly used medicines are made from plants, herbs, bone powders, seeds, roots, juices, and leaves. Her patients are given the medicines in the form of inhalation or drinking.

People in West Belesa *Woreda* generally question the effectiveness of biomedical medicine to deal with evil spirits and mental illness. Mental health problems are considered by most of the participants to be more successfully treated by traditional methods, such as religious practices, indigenous healing, and self-help strategies, than by modern medicine. The key informant interviews showed that mental stress in the study area is commonly attributed to a spell, evil spirits, or a punishment for wrongful deeds. Hence, in West Belesa, *yeminet fewashoch* (faith healers) and *debteras*, who are senior members of a religious institution, use the Bible, the Koran, *tsebel*, and prayers to treat people afflicted with evil spells and mental disorders.

Local community's knowledge and perception of indigenous medicine: Many people in West Belesa agreed that indigenous healthcare practitioners are helpful in the treatment of illnesses, diseases and bone fractures. For example, a female beneficiary of indigenous medicine explained in an FGD that indigenous healers provide important primary healthcare services to the community, mainly because they believe that some diseases, for instance *yeseytana himem* (illness of the devil) and *sibirat* (fractured bone), cannot be cured by biomedicine. This implies that indigenous healthcare practices may contribute to primary healthcare. These and other activities of indigenous healers assist the primary health care system by reducing its work load in disease prevention, basic care, and maternal health services. Data obtained from observation indicate that indigenous healers are sought for the following health problems: ailments believed to be inflicted by *buda* (the evil eye), *yewusha beshita* (rabies), and *yewof beshita* (hepatitis B). In addition, a 23-year-old male informant confirmed that indigenous healers can successfully treat *yebab nidifat* (snake bite), *sibirat*, and *yamiro himem* (mental illness).

Data obtained from observation revealed that indigenous healers in West Belesa *Woreda* are not only

medically skilled but have also acquired knowledge of creation myths, cultural traditions and representations, as well as how to maintain harmonious man–nature–universe relationships and their symbolic, transcendent relationships with the sacred. They are also the guardians of the local cultures, values, and customs. By and large, observations and discussions with local healers indicated that healers are expected to diagnose and prescribe medicines for common physical and spiritual ailments and illnesses, to provide protection against witchcraft and misfortune, and to bring prosperity and happiness to people.

Many people in West Belesa *Woreda* prefer to be treated by spiritual healers when they cannot be treated successfully in health centers. One of the informants noted:

"When treatment seems not to work in the modern health center, people in our village go for prayers to a faith-based healer. For example, I am a Christian and I usually pray and get healing from priests praying for me; sometimes I went to the doctor and received treatment, but saw no improvement." [Male 27, Kalay *Kebele*, April 24, 2017]

Another informant described his experiences as follows:

"A year ago, I was sick. I had severe *yemenfes chinqet* (stress) and felt dizzy. I also had nightmares and couldn't walk long distances. My father consulted an Orthodox priest and the priest ordered my father to take me to a local *tsebel* (holy water). The priest filled a bottle with water, prayed and read a holy book, while repeatedly putting the cross into the water and on my head. The priest ordered me to take off my clothes and poured half of the pot's water over my naked body and sprinkled water on my face. He gave me the rest of the water to drink. Because of that, with the help of *fetari* (God), now I feel good." [Male 42, Kalay *Kebele*, April 11, 2017].

One indigenous healing practice in West Belesa neglected by researchers is bone setting. Fractures are widely treated by *wogeshas*. One patient explained that:

"In open fractures, you need a few days of hospital treatment to heal the wounds, and then you must go to a *wogesha* to treat the fracture because *wogeshas* have more expertise in fracture treatment." [Male 26, Arbaya Town, April 24, 2017]

Systematic observation revealed that bone setters used different materials to treat fractured bones. Broken limbs are stabilized with twigs and needles woven together, or with splints made from wood or bone tied together with either cloth or pieces of leather. *Wogeshas* also use plates of copper, lead, and iron.

The following statement exemplifies the above-mentioned conditions:

"Last year, my son fell down from a tree and got a *sibirat* (fracture) on his leg. I immediately took him to a clinic. However, after providing first aid, they sent us home but the pain did not stop; instead, it became more severe. Then I took him to the local bone setter and he immediately set the fractured bone. He managed to fix the problem, surprisingly, thanks to *fetari* (God). My son is now well." [Male 44, Menit *Kebele*, April 11, 2017]

Factors in addition to treatment outcome were also said to drive the preference for indigenous healers. They are usually located within their own community, whereas biomedical clinics tend to be less accessible and more expensive. As shared in FGDs, the cost of biomedical treatment is a factor that influences patients' decisions to seek indigenous medicine for treatment.

Biomedical healthcare practitioners' perceptions of indigenous medicine: Although the interviewed modern healthcare providers expressed a variety of views regarding indigenous health practices, most had negative perceptions of indigenous healing. According to a 26-year-old female health extension worker, although indigenous healers successfully treat some health problems in rural communities, they do not follow standards or use accurate dosages of medications, and prescribe medicines based on trial and error. However, she explained that health extension workers work hand-in-hand with indigenous healers. In West Belesa *Woreda*, some of the health extension workers give training to indigenous healers on how to utilize and manage the health equipment and administer treatments.

A 31-year-old clinic worker in Menit *Kebele* stated:

"Most of the herbalists have no formal education and do not know the chemical composition of the herbs and other substances they use. This could be dangerous and a threat to the health of their clients."

A 41-year-old male medical doctor in Arbaya Town also questioned the validity of indigenous healers:

"I don't really believe that spiritual healers can cure mentally disordered patients, as mental health disorders by their nature are caused by either nerve damage or complicated nerve failure."

He considered the indigenous healthcare system part of "harmful traditions because their medicine has not been scientifically proven and may have dangerous side effects". Moreover, he considered treatment with medicines of unknown dosage unacceptable and risky. Hence, he regarded spiritual healing techniques to be largely incompatible with Western scientific knowledge.

Some of the modern healthcare practitioners acknowledged the contribution of indigenous healthcare practices to the primary healthcare system, and expressed a need for collaboration between modern and indigenous medical systems. A 29-year-old health post worker stated:

"Many of the rural communities depend on indigenous medicine for various ailments and I believe that some of the healers carry out harmful traditional medical practices due to differences in skill and knowledge. Such

differences can result in inaccurate diagnosis, dosage determination, and preparation of medicaments, but most of the indigenous practitioners are more useful than harmful."

Similarly, a female nurse key informant stated:

"I believe that spiritual healing is effective in healing different illnesses because it is only by faith that anyone can be cured. You must believe that the medicine that you are using, either the biomedical or the traditional, will cure you. Most of the people have strong faith in indigenous healing and that is why they are cured from different diseases." [Female 26, nurse, Arbaya Town, April 24, 2017]

These examples indicate that some biomedical healthcare practitioners have a positive attitude towards indigenous healing.

Discussion

Indigenous healers may contribute significantly to the identification, prevention, and treatment of illnesses and diseases The perceptions of the people in West Belesa *Woreda* regarding health beliefs and practices are broad, associating causes of illnesses and healing practices with supernatural, natural, and religious factors. This viewpoint is shared by Konadu (7) and Kahissay *et al*. (30), who indicate that indigenous approaches to healing in Africa are based on a worldview that considers the mental, social, spiritual, physical, and ecological dimensions of health (24). The World Health Organization has strongly recommended the integration of indigenous medicine into public health systems in Africa and noted its successful contribution to increasing health service coverage in China and India (2,46). This indicates the need for indigenous health providers and modern healthcare practitioners to collaborate in the development of effective and sustainable disease prevention and treatment programs. Greater collaboration and integration may be achieved in Ethiopia when both biomedical and indigenous practitioners share experiences with each other. This may enable biomedical practitioners to provide training to indigenous healers on how to properly administer pharmaceutical drugs and to improve hygiene practices. The traditional healthcare practitioners can, in turn, assist public health providers by motivating communities to use public healthcare services.

Indigenous healers acquire their indigenous medical knowledge in different ways. Most indigenous healers in the study area acquired their knowledge from a family member, but some attributed their medical knowledge to God/Allah, or to trial and error and observations in nature. Most healers pointed out that they have a strong relationship with nature and the local cosmos, and come from a lineage of healers. Several studies in different parts of Ethiopia indicate that the primary means of acquiring indigenous medical knowledge is through families and ancestors (11,17,19,22,44-46). The people in West Belesa *Woreda* have passed their indigenous medical knowledge from generation to generation by word of mouth, as in other African countries, including Kenya, where the medical knowledge of most ethnic groups is passed on orally within the context of the family, community, and clan (47). The current study emphasizes that generational changes in health beliefs must be considered by public health providers in their efforts to provide effective and acceptable health services to all segments of the population.

Most participants in the three study communities had a positive perception of the indigenous healthcare system. People expressed their satisfaction with the services provided by the indigenous healers, stating that most of the treatments were effective. This finding is reported in other African countries. For instance, Elujoba *et al.* (5), Genet (46), and Gureje *et al.* (48) note that most communities in sub-Saharan Africa view indigenous healing favorably, probably because indigenous medicine is deeply intertwined in the culture of the people. This was evident in West Belesa in the treatment of fractures, impotence, infertility, hemorrhoids, mental disorders, and hypertension. Beneficiaries of this healthcare system claimed that treatment of these ailments by indigenous medicine is more effective than modern medicine.

Most key informants from the local community perceived the indigenous healing system to be embedded in their sociocultural backgrounds and religion. The preparation and use of indigenous medication in West Belesa is strongly influenced by the social and cultural values and beliefs of local communities. This finding is similar to results from other communities in which indigenous medical practices are woven into the fabric of their culture and spiritual lives (8,11,18,19,43,49). The link between indigenous healing practices and a society's cultural and religious values has been described by Kleinman (50): "medical systems are part of a cultural system". In the current study, data interpretations are based on Good's (51) and Kleinman's (33,50) notion of culturally-constructed expressions of illness and health, as well as Turner's (52) views of symbols as 'multi-vocal' and the notion of 'ritual drama'. The people of West Belesa symbolically interpreted and understood the illness perceptions and healing rituals that are part of their daily lives. Spiritual and herbal healing practices are closely related to ritual practices and moral values. Religious healing rituals, such as using *tsebel*, and various secular rituals, are performed by spiritual healers to cope with evil spirits and uncertainties. Similarly, some symbols have been embodied and routinely used by the West Belesa indigenous healers and their patients. These include certain styles of dressing and behaving, the use of specific materials for the performance of healing rituals, and the articulation of certain words. One of the central efforts in healing is to symbolize the source of suffering, to find an image around which a narrative can take shape (51). The interpretations of illness by the indigenous healers of West Belesa *Woreda* and their patients frequently related the origins of illnesses to the cultural, social, religious, and environmental setting of the sufferer.

The findings of this study corroborate those of Genet (44), who demonstrated that biomedical healthcare practitioners have overlooked indigenous healers in

Shinasha society in southwestern Ethiopia. The widespread negative attitudes of biomedical practitioners toward indigenous medicine in Ethiopia (19) appear to be largely due to lack of adequate knowledge on the part of physicians and other modern health workers about the characteristics and benefits of indigenous medicine. In the current study, although most members of the local communities favored cooperation between and integration of modern and indigenous healthcare systems in the area, most of the biomedical practitioners had negative views towards indigenous healing. They claimed that issues of safety and efficiency, lack of supporting scientific evidence, and non-disclosure of information by healers limit the usefulness of the indigenous healthcare system. The distrust that persists between modern and indigenous healthcare practitioners remains a challenge for the integration of the two medical systems. Other studies also highlight the gap between policies encouraging integration of indigenous healthcare services into the primary healthcare system and actual implementation (3,17,19). This study indicates that harmonizing this relationship and fostering higher levels of cooperation may require a better understanding by biomedical practitioners of indigenous medicine and the underlying cultural factors, as well as outreach activities by the health services that provide indigenous practitioners with information about biomedicine and with technical assistance and support.

Nonetheless, a combination of socioeconomic and cultural factors, the accessibility of indigenous healers, and deficiencies in the official health services continue to foster indigenous treatment-seeking behavior. The influence of these factors is consistent with Singer & Baer's (32) theory of the "critical medical and/or political economy approach of healthcare systems". This theory helps explain the disparities in healthcare service accessibility and provisions between rural and urban dwellers of West Belesa and the impact of differences in social status, income levels, power relations, and residential patterns. Most of these findings are further corroborated by the 1998 Health and Nutrition Survey (53). They reveal that a sick person's decision to attend a particular healthcare facility is influenced by a combination of personal needs, cultural forces and social networking, the economic status of households, and the acceptability of healthcare providers. These findings share elements of Farmer's (54) political economy approach to examining the structural, political and economic factors shaping the experience, distribution, and management of illness.

The results of this study indicate that indigenous medicine in primary healthcare plays an important role in healing both illnesses that are perceived to be caused by supernatural powers such as evil spirits and in treating common diseases such as diarrhea, headache, and stomach ache. Although many people in West Belesa *Woreda* prefer to use indigenous medicine for most illnesses and some infectious diseases, a large number also use biomedicine, often together with indigenous medicine.

Conclusions

This qualitative study indicates that the involvement of indigenous healers in primary healthcare in West Belesa *Woreda* is imperative for the identification, prevention, and treatment of illnesses and diseases. Indigenous healers are perceived by the local population as being knowledgeable about medicinal plants, and are consulted for a wide range of health, social, and spiritual problems. People perceive their cultural and religious environment to be strongly associated with their health problems, treatment outcomes and overall wellbeing, because an individual's behavior and interaction with the social, cultural, and supernatural forces are believed to affect the wellbeing of the whole group due to the intimate connections among individuals, families, as well as the deceased. Health and illness are believed to be determined primarily by whether there is a good relationship between individuals and their ancestral spirits, individuals and the supernatural power, and between individuals and their environment.

This study may inform the development of more inclusive policies towards greater cooperation between biomedical and indigenous healthcare services. But this will require that primary healthcare workers understand the cultural and religious context of health, illness, and healing to facilitate the identification, prevention, and treatment of various ailments. Culture-sensitive health services may help health workers to meet the health needs of the people more comprehensively and make services more accessible and acceptable in the study area.

Enabling indigenous healers to work in primary healthcare settings requires closer collaboration with healthcare workers to acquaint them with biomedical concepts and procedures, and permit scientific evaluation of herbal medicines.

We recommend that additional qualitative as well as quantitative studies be undertaken in other communities in Ethiopia to assess the potential for closer cooperation between indigenous and biomedical practitioners.

Authors' contributions

TW directed the focus groups, key informant interviews, and participatory observation; performed the coding, categorized the emerging themes, collected the data, and drafted the manuscript. Both HK and KE served as supervisors and assisted in research design, analysis, and revised the manuscript. All authors read and affirmed the final version of the manuscript.

Funding

The authors received no financial support for the research and publication of this article.

Availability of data and materials

Data and materials are available from the corresponding author.

Ethics approval and consent to participate

Initially, letters of consent were obtained from the University of Gondar and the zonal and district offices.

Then, permissions to conduct the study were obtained from the West Belesa *Woreda* administrative and Culture and Tourism offices. Data collectors explained the objectives of the study and obtained oral consent from all study participants at the time of the surveys and interviews. Research participants were informed that they could withdraw, even during an interview if they so desired. All data were kept anonymous and confidential.

Declaration of conflicts of interest

The authors declare no potential conflicts of interest with respect to the authorship of this article.

Competing interests

The authors declare that they have no competing interests.

Acknowledgements

The authors want to thank all study participants, the West Belesa Culture and Tourism Office, and the reviewers for their assistance.

References

1. Bodeker G, Burford G, Grundy C, Ong CK, Shein K. WHO Global atlas of traditional, complementary and alternative medicine. Geneva: World Health Organization, 2005. https://apps.who.int/iris/handle/10665/43108
2. WHO. Global report on traditional and complementary medicine 2019. Geneva: WHO, 2019. www.who.int/traditional-complementary-integrative-medicine/WhoGlobalReportOnTraditionalAndComplementaryMedicine2019.pdf?ua=1
3. Bodeker G, Kronenberg F. A public health agenda for traditional, complementary, and alternative medicine. American Journal of Public Health. 2002;92(10):1582-91.
4. Dahlberg AC, Trygger PSB. Indigenous medicine and primary health care: The importance of lay knowledge and use of medicinal plants in rural South Africa. Human Ecology. 2009;37:79-94.
5. Elujoba A, Odeleye O, Ogunyemi C. Traditional medicine development for medical and dental primary health care delivery system in Africa. African Journal of Traditional, Complementary and Alternative Medicines. 2005;2(1):46-61.
6. Bandaranayake WM. Quality control, screening, toxicity, and regulation of herbal drugs. In: Ahmad I, Aquil F, Owais M (eds.). Modern phytomedicine: Turning medicinal plants into drugs. Weinheim, Germany: Wiley - Voh Verlag; 2006: 25-57.
7. Konadu KB, Indigenous medicine and knowledge in African society. New York and London: Routledge; 2007.
8. Negwo AB. Church-based healing and the state in Ethiopia, 1900-1980. Atlanta: Emory University; 2008.
9. Teshome-Bahiru W. Impacts of urbanization on the traditional medicine of Ethiopia. The Anthropologist. 2006;8(1):43-52.
10. Vecchiato NL. Illness, therapy, and change in Ethiopian possession cults. Africa. 1993;63(2):176-96.
11. Workneh T, Emirie G, Kaba M, Mekonnen Y, Kloos H. Perceptions of health and illness among the Konso people of southwestern Ethiopia: Persistence and change. Journal of Ethnobiology and Ethnomedicine. 2018;14:18.
12. Leyew Z. Wildplant nomenclature and traditional botanical knowledge among three ethno-linguistic groups in northwestern Ethiopia. Addis Ababa: Organization for Social Science Research in Eastern and Southern Africa (OSSREA); 2011.
13. Janzen JM. The social fabric of health: An introduction to medical anthropology. New York: McGraw-Hill; 2002.
14. Cunningham AB. An Africa-wide overview of medicinal plant harvesting, conservation and health care. Rome: Food and Agricultural Organization, 1997.
15. Bishaw M. Integrating indigenous and cosmopolitan medicine in Ethiopia. PhD dissertation. Southern Illinois University, Carbondale, Illinois; 1988.
16. Pankhurst A. Research on Ethiopian societies and cultures during the second half of the twentieth century. Journal of Ethiopian Studies. 2002;35(2):1-60.
17. Kassaye K, Amberbir A, Getachew B, Mussema Y. A historical overview of traditional medicine practices and policy in Ethiopia. Ethiopian Journal of Health Development. 2006;20(2):127-34.
18. Kloos H, Haile Mariam D, Kaba M, Tadele G. Traditional medicine and HIV/AIDS in Ethiopia: Herbal medicine and faith healing: A review. Ethiopian Journal of Health Development. 2013;27(2):141-55.
19. Bishaw M. Promoting traditional medicine in Ethiopia: A brief historical review of government policy. Social Science and Medicine. 1991;33(2):193-200.
20. Pankhurst R. An introduction to the medical history of Ethiopia. Trenton, New Jersey, USA: Red Sea Press; 1990.
21. Chanie T. A socio-cultural study of the causes, transmission, prevention, and treatment of malaria. The case of Debre Elias Woreda, East Gojam Zone, Amhara National Regional State. MA thesis. Addis Ababa University; 2006.
22. Fassil H. "We do what we know": Local health knowledge and home-based medicinal plant use in Ethiopia. PhD thesis. University of Oxford; 2013.
23. Fassil H. Beyond plants professionals & parchments: The role of home-based medicinal plant use and traditional health knowledge in primary health care in Ethiopia. Ethno-Botany Research and Applications. 2005;3:37-49.
24. Young AL. Medical beliefs and practices of Begemder Amhara. PhD dissertation, Department of Anthropology, University of Pennsylvania, Baltimore; 1970.

25. Reminick RA. The evil eye belief among the Amhara of Ethiopia. Ethnology. 1974;13(2):279-91.
26. Kloos H, Menbera T, Tadele A, Chanie T, Debele Y, Abebe A, *et al.* Traditional medicines sold by vendors in Merkato, Addis Ababa: Aspects of their utilization, trade, and changes between 1973 and 2014. Ethiopian Journal of Health Development. 2014;28(2):135-52.
27. Kloos H, Kaba M. Traditional medicine. In: Berhane Y, Hailemariam D, Kloos H (eds.). The epidemiology and ecology of health and disease in Ethiopia. Addis Ababa: Shama Books; 2006.
28. Aragaw TJ, Afework DT, Getahun KA. Assessment of knowledge, attitude, and utilization of traditional medicine among the communities of Debre Tabor Town, Amhara Regional State, north central Ethiopia: A cross-sectional study. Evidence-Based Complementary and Alternative Medicine. 2020: Article ID: 6565131. https://doi.org/10.1155/2020/6565131
29. Wubetu M, Abula T, Dejenu G. Ethnopharmacologic survey of medicinal plants used to treat human diseases by traditional medical practitioners in Dega Damot District, Amhara, northwestern Ethiopia. BMC Research Notes. 2017;10:157.
30. Kahissay MH, Fentu TG, Boon H. Beliefs and perceptions of ill-health causation: A socio-cultural qualitative study in rural north-eastern Ethiopia. BMC Public Health. 2017;17:124.
31. Birhan W, Giday M, Teklehaymanot T. The contribution of traditional healer's clinics to public health care system in Addis Ababa, Ethiopia: A cross-sectional study. Journal of Ethnobiology and Ethnomedicine. 2011;7:39.
32. Singer M, Baer H. Critical medical anthropology. Amityville, New York: Baywood Publishing Company; 1995.
33. Kleinman, A. Patients and healers in the context of culture. Berkeley: University of California Press; 1980.
34. CSA. The 2007 Population and Housing Census of Ethiopia. Addis Ababa: Central Statistical Agency, 2008.
35. CSA. Report on the 1998 Health and Nutrition Survey. Addis Ababa: Central Statistical Agency; 1999.
36. Sisay T. Vulnerability of smallholder farmers to climate change at Dabat and West Belesa districts, North Gondar, Ethiopia. Journal of Earth Science & Climatic Change. 2016;7:365.
37. Yehuala S, Melak D, Mekuria W. The status of household food insecurity: The case of West Belesa, North Gondar, Amhara Region, Ethiopia. International Journal of Scientific Research and Management. 2018;6(6):158-66.
38. Addisu S, Goshu G, Selassie YG, Tefera, B. Evaluation of watershed development plan and technology adoption level of farmers in Amhara Region, the case of SWHISA Project, Ethiopia. International Journal of Scientific and Research Publications. 2013;3(2):1-11.
39. Biresaw M, Pavliš J. Vegetation structure and density of woody plant species in two woodland areas of Amhara National Regional State, Ethiopia. Acta Universitatis Agriculturae, Silviculturae Mendelianae Brunensis. 2014;58(1):21-32.
40. Fentahun W, Wubshet M, Tariku A. Undernutrition and associated factors among children aged 6-59 months in East Belesa District, northwest Ethiopia: A community based cross-sectional study. BMC Public Health. 2016;16:506.
41. Kebede B, Gebeyehu A, Sharma HR, Yifra S. Prevalence and associated factors of neonatal mortality in North Gondar Zone, northwest Ethiopia. Ethiopian Journal of Health Development. 2012;26(2):66-71.
42. Braun V, Clarke V. Using thematic analysis in psychology. Qualitative Research in Psychology. 2006; 3(2):77-101.
43. Foster GM, Anderson BG. Medical anthropology. New York: Wiley; 1978.
44. WHO. WHO traditional medicine strategy 2002-2005. Geneva: World Health Organization; 2002.
45. Dejene TK. Persistence and change in the practice of medical pluralism in Addis Ababa, Ethiopia. PhD dissertation. Andhra University, Visakhapatnam, India; 2013.
46. Genet A. Indigenous herbal medicinal knowledge among the Shinasha. Global Scientific Journal. 2018;6(9):63-83.
47. Owuor J. Integrating African indigenous knowledge in Kenya's formal education system: The potential for sustainable development. Journal of Contemporary Issues in Education. 2008;2(2):21-37.
48. Gureje O, Nortje G, Makanjuola V, Oladeji BD, Seedat S, Jenkins R. The role of global traditional and complementary systems of medicine in the treatment of mental health disorders. The Lancet Psychiatry 2015;2(2):168-77.
49. Kaba M. Indigenous medical beliefs and practices among the Oromo of Illubabor. MA thesis. Social Anthropology Department, Addis Ababa University, Addis Ababa; 1993.
50. Kleinman A, Kleinman PA. Patients and healers in the context of culture: An exploration of the borderland between anthropology, medicine, and psychiatry. Berkeley: University of California Press; 1980.
51. Good BJ. Illness representations in medical anthropology: A reading of the field. In: Medicine, rationality and experience: An anthropological perspective. Lewis Henry Morgan Lectures. Cambridge: Cambridge University Press; 1994: 25-64.
52. Turner VW. Symbolization and patterning in the circumcision rites of two Bantu-speaking societies. In: Douglas M, Kaberry PM (eds.). Man in Africa. London: Tavistock Publishers; 1969: 229-44.

53. EDRE. Health and Nutrition Survey. Addis Ababa: EDRE, 1998.

54. Farmer P. Social scientists and the new tuberculosis. Social Science and Medicine. 1997;44(3):347-58.