Human African Trypanosomiasis: Ethnomedical and Biomedical Relationships

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Abstract: Human African Trypanosomiasis (HAT) threatens more than 55 million people in sub-Saharan Africa. The focus of this paper is the relationship that exists between ethnomedical and biomedical practitioners regarding treatment of HAT. The relationship has been one of conflict. Biomedical practitioners have attempted to remove ethnomedicine from African society. This practice has been unsuccessful, especially in rural regions. Ethnomedical practitioners have adopted some aspects of biomedicine, but inadequate application and resources limit their efficacy. The biomedical community, including the World Health Organization, has not recognized the resource potential within ethnomedicine. An examination of the areas of conflict reveals differences in the explanatory models of disease causation and treatment methods. There has been some progress toward a cooperative model of healthcare, but most biomedical practitioners disregard ethnomedical techniques as primitive and ineffective. The conclusion of this paper presents a bleak future for the prevention and treatment of HAT in Africa. This future may be avoided with an increased level of cooperation and understanding between the two systems.

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A Clinical Explanation of Human African Trypanosomiasis

Human African Trypanosomiasis (HAT), also known as African Sleeping Sickness, is caused by the haemoflagellates *Trypanosoma brucei gambiense* in west and central Africa or by *Trypanosoma brucei rhodesiense* in east and southeast Africa (Raadt 1989). The two diseases result in two very different presentations.

T. b. rhodesiense causes acute, rapid and severe septicaemia-like disease with high parasitemia in which central nervous system symptoms appear within weeks (Raadt 1989). In the early stage the main clinical signs are high fever, weakness and headache, joint pains and pruritus (itching). As the disease progresses these symptoms become more pronounced and other manifestations such as anaemia, oedema (cardiovascular and endocrine) and spontaneous abortion can occur. When the parasite invades the central nervous system, the infection changes. The patient can no longer concentrate and sudden and frequent mood changes occur. Eventually the patient falls into a deep coma and dies.

T. b. gambiense infections are more chronic with low parasitemia and intervals of several months or even years before the central nervous system becomes affected. Early diagnosis of *T. b. gambiense* is difficult because specific clinical signs are absent. Only serological tests can be used in population surveys to establish the presence of *T. b. gambiense.* Despite two very different presentations, both forms of the disease will end fatally without appropriate treatment (Raadt 1989).

The World Health Organization estimates that 55-60 million people are exposed to the risk of becoming infected with HAT, but that only four million of them are under active surveillance or have access to health centres where reliable diagnosis is available (WHO 1999). In 1996 approximately 30,000 new cases of HAT were reported, however this does not reflect the real epidemiological situation. It is estimated that more than 300,000 people are infected with HAT (WHO 1999). In some territories, sleeping sickness has become the first cause of mortality. To date, the Democratic Republic of Congo has estimated the number of deaths due to HAT as equal or greater than that due to AIDS.

Both subspecies of HAT are transmitted through the bite of a tsetse fly of the genus Glossina. The tsetse fly feeds on the blood of animals and humans. As it feeds, it transfers blood trypomastigotes between the infected and uninfected through blood contaminated mouthparts (Raadt 1989). It then acts on many body systems including cardiovascular and neurological. Some trypanosomes evade the immune system by modifying their surface membrane, a process known as antigenic variation. Through this process trypanosomes can express thousands of variants, the number of variants multiplying with each new surface change. This makes it a virulent parasite that is difficult for the human immune system to fight.

Two Systems of Medicine

The purpose of this paper is to look at the relationship between two systems of medicine in their attempt to treat HAT. The first system, traditional medicine or ethnomedicine, is the health management system of a society functioning in "a matrix of values, traditions, beliefs, and patterns of ecological adaptation" (McElroy and Townsend 1996:102). Within this system of medicine there are two sub-disciplines: herbalists who approach sickness in a manner similar to biomedical practitioners and diviners or prophets who are more like psychotherapists in their practice of medicine. A combination of both disciplines often approaches the treatment of disease and in some societies the same person performs both roles. The second system is biomedical medicine, a clinical medicine based on the principles of the natural sciences. It contains many sub-specialties and is often practised by missionaries or medical doctors in the rural areas of Africa. In the examination of the relationship between these healthcare systems critical anthropological theory will be used. A detailed examination of critical medical anthropology can be found in Singer and Baer (1995).

The distribution of wealth and power and the division of labour within society affects disease patterns and health care access. The factors that shape the healthcare within a nation, or a continent, are grounded in historical, social, and political events. One such event is colonization and this paper will demonstrate the impact this still has on healthcare in nations fighting HAT. It would be a mistake to assume that the examples in this paper reflect the beliefs of all Africans living in the areas affected by HAT. Generalizations are made about the African idea of health and response to biomedical medicine. However, where it is possible specific health care systems will be examined within the context they are usually found.

The name for a specific disease may be different, or absent, in a comparison of medical systems based on different systems of belief. Some traditional medical systems do not have a disease comparable to HAT but treat the symptoms of the disease individually. The Azande, a central-African people, describe chronic conditions associated with endemic *gambiense* Trypanosomiasis as diseases caused by witchcraft. Symptoms of *T. b. Rhodesiense,* with "sudden mood changes, insomnia and sleep-like unconsciousness" (WHO 1999), followed by death often make villagers wonder why the person had such a painful death: was it madness or witchcraft? African traditional medicine often interprets the symptoms of disease separately, therefore, there is often no direct referral to HAT but to the separate symptoms only.

The Traditional Approach

According to an estimate of the World Health Organization, approximately 88 percent of the people in the developing world rely mainly on traditional medicines for their primary healthcare needs (WHO 1999). Africa makes the most use of herbal preparations, "95 percent rely on plants for their drug needs" (Anyinam 1995:322).

Traditional medicine constructs a causal link between social relations and disease (Lyons 1992). The occurrence of disease or death leads to questions of why it occurred and who was responsible. The Azande and the Babua peoples, who live in the Central African Republic, southern Sudan and northern Democratic Republic of Congo, the Mangbetu of central Sudan, and the Shona of Zimbabwe believe that humans employing witchcraft cause the majority of deaths. Witchcraft is the use of extraordinary power to create feelings of ill health. Identification of persons responsible for witchcraft requires equally powerful healers. Traditional healers discover the identity of the person responsible for witchcraft using oracles, divination and medicine.

The healer does not keep records of the event or classify the illness as anything other than witchcraft. This contrasts with the biomedical regime of accurate record keeping and history taking (Gelfand *et al.* 1985). This requirement of biomedical medicine may be precluded if the healer is local and knows the person

being examined. The belief in witchcraft often means that the only cure for these diseases lies in the appeasement of the spirit or person who has caused the disease. There is no cure for disease caused by witchcraft or sorcery. This includes the symptoms of HAT.

The Sukuma of Uganda have a different belief system. They still rely on traditional medicine but they believe that all disease is treatable by medicines. Frieburghaus *et al.* (1996) obtained plants used to treat HAT and information on how to prepare them from traditional healers in southeastern Uganda. The plants were usually administered orally as an extract, except one which was applied topically. Their research confirmed the efficacy of nearly all of the plants traditionally used to treat sleeping sickness in Uganda. Only one of the plants lacked antitrypanosomal activity (Freiburghaus *et al.* 1996:768).

The Pokot of Kenya take yet another approach to traditional medicine. They still maintain a personalistic approach to disease, but they incorporate biomedical medicine into it. They "do not regard Western medicine as superior or inferior to indigenous medicine" (Nyamwaya 1987:1279), they just regard it as another resource upon which they can call.

The Arrival of Colonial Medicine

The arrival of biomedical practices accompanied the arrival of military colonial forces and missionaries. Europeans believed that their presence in Africa "was accompanied by undeniable benefits for many African peoples. Western medicine must be considered an outstanding example of such benefits" (Lyons 1992:172). The colonial health policy was centred on areas of economic importance. The northern region of the former Belgian Congo was one such area. Colonists discovered deposits of gold in the Uele region between 1903 and 1906 and wanted to use cheap local labour to mine it (Lyons 1992). The threat of HAT affecting the labour pool resulted in the introduction of Western medicine into the area.

The arrival of HAT often accompanied the colonials. It was a disease that neither traditional nor biomedical practitioners had the knowledge to treat or prevent. People and cattle died of war and disease, leading to widespread famine and environmental decay. A combination of political and social events created the right environment for the spread of sleeping sickness (Musere 1990).

The treatment of HAT often brought native Africans into contact with Western colonials for the first time - as a result the disease became associated with colonial doctors. The belief emerged in many African nations that the increase in HAT was deliberate. A form of biological warfare introduced by colonists to clear the land for more white settlers (Lyons 1992). This idea fitted into the history of the time and the chaos early colonials and their armies brought to Africa.

Early colonial doctors did not believe that the Africans could have developed mechanisms of their own to control disease. The Africans were considered lazy and backward in their technology. The condition of those afflicted with HAT reinforced these racist views. It was an early belief that Western medicine would conquer the tsetse fly and HAT. It was also believed that traditional medicine had no place in African society. British colonial medicine virtually destroyed the traditional medical institutions of Uganda. It was assumed that any medicine introduced to Africa would be superior to indigenous medicine. All colonial powers echoed this sentiment.

The biomedical practitioners found the rituals of traditional medicine particularly hard to understand and discounted them as "superstitious and barbaric practices" (Lyons 1992:168). Christian missionaries opposed traditional medicine and "all traditional practitioners were indiscriminately labelled witch doctors" (Musere 1990:74). They were to be removed from African society as they represented the sub-Christian and savage nature of Africa. The resistance to magicoreligious belief systems has been particularly strong in Africa because healthcare has largely been in the hands of missionary groups that offer competing religious belief systems (Green 1988). The colonial ideas about traditional medicines still prevail today. In most of Kenya, Western health workers will not refer patients to traditional practitioners. They see traditional medicine as "inferior, and mainly magical" (Nyamwaya 1987:1285).

Barriers to Collaboration

The reluctance of biomedical practitioners in accepting traditional medicine was matched by the reluctance of African acceptance of biomedicine. The chiefs of the Azande and the Azande society as a whole are reluctant to adopt new technologies, preferring to maintain traditional practices (Lyons 1992:187). Resistance to change led to confrontation when the colonials tried to introduce new medicines to treat HAT.

Azande medicine incorporates the manipulation of the inner life force which resides in most natural phenomena; a very different approach to the biomedical medicine introduced by the colonials. The Azande practitioners shared with the Europeans only the remedies that they believed required the "art of healing," a property the Europeans did not possess (Lyons 1992:173). Reaction to the imposed biomedical system started with simple resistance. They could not trust Europeans with other Azande medicines, so they gave them the ones they could not use.

There are three features of biomedicine that alarmed Africans the most when biomedical practitioners tried to control HAT: the physical examination, quarantine of suspected victims and the medicines. The power relationship encountered in the physical examination created issues of control. Some societies "did not approve or permit the examination of young children, the elderly of both sexes, slaves or women" (Lyons 1992:185). Quarantine was seen as a death

sentence. The traditional practitioner had no access to the afflicted and the true cause of the disease could not be assessed. The use of biomedical medicines also alarmed Africans. They feared that needles spread HAT. Another reason for fearing early medicine was the use of the medication Atoxyl (the only available trypanocide until the mid 1920's), as it occasionally resulted in blindness or death.

The appearance of the disease often coincided with the appearance of the colonials and their medicine. The social and environmental disruption created by colonial activity created conditions that favoured a localised increase in the rates of HAT. Disruption of the tsetse fly habitat led to increased daytime activity and higher rates of transmission. Combined with a concentration of population for economic exploitation, the conditions for endemic disease were established.

The lack of availability further discourages the use of Western style medical facilities. Western style medical facilities are often "expensive, inadequate, grossly understaffed, in most cases remote from the people, and the patient receives little personal attention or care" (Musere 1990:76). The use of biomedical facilities can lead to confrontation between the two medical systems. The Pokot often clash with biomedical practitioners when they attempt to remove people from hospitals or treat them with traditional medicine while they are in a hospital (Nyamwaya 1987:1281). Many Africans still view biomedical treatment of HAT and other diseases as part of the conquest and reorganisation of their lives by foreign powers. As a result they avoid using the available services.

The Potential for Cooperation

In 1977, the World Health Organization (WHO) adopted a resolution to make traditional medicine a focus of research and study (Lyons 1992). Its aim was to close the gap between the two systems of medicine and lead to cooperation in knowledge of how to treat diseases. There were perceived benefits for both systems. "Increased communication would help to bridge the gaps and make biomedicine more effective in communities and villages," (Neumann and Lauro 1982:1817) and the traditional practitioners would have "opportunity to increase their skills and knowledge [which is] likely to translate into a potential for increased income" (Neumann and Lauro 1982:1820).

Closing the gap between two medical systems invariably means the compromise of one to accommodate the other. The skills and medicines promoted by the WHO resolution are those of the dominant powers. It was the intention of the scheme to use the medical knowledge of biomedical practitioners and the "hands-on" approach of the traditional healers. The traditional healers would remain, but they would become agents of biomedical healing instead of traditional healing. Financially this was a better option for international aid agencies. The presumption was made that traditional healers would be willing to participate in

the distribution of knowledge that runs counter to their own beliefs. However, if a resolution or health program is to succeed, it must respect and include the beliefs of the healers.

Since the introduction of biomedicine into Africa there has been some, but not much, exchange of ideas between the two systems. Biomedical practitioners have been willing to accept some aspects of traditional medicine. These usually resemble the procedures or medicines found in their own practices. The Azande have compiled "over 400 therapeutic materials for treating over 100 illnesses" (Lyons 1992:171). The colonial doctors readily accepted this part of Azande medicine. The Babua had a wide range of medicines of botanical origin, some of which were considered efficacious by colonial doctors.

Colonial doctors labelled the Babua method of using cups to bring blood to the skin's surface and the application of treatment through small incisions 'medicine' or 'therapy.' Similarly, they recognized Mangbetu medicine administered under the skin as acceptable. Western medical experts still find the 'herbalist' medicine easier to accept but when 'herbalist' and 'spiritual' medicine are combined the Western practitioners find it hard to separate the two and tend to discount both.

Biomedicine has not been adopted as quickly as biomedical practitioners would like. However, there has not been total rejection of Western medicine. The Pokot accept biomedical treatments when they prove more effective than traditional medicines. The Shona are more likely to use biomedical practices if they live in the city. Twenty-nine percent of urban Shona use the services of a biomedical practitioner compared to 8 percent in rural areas (Gelfand *et al.* 1985). It is probable that this pattern of utilisation has more to do with accessibility than belief in different medical systems. The Azande will only approach Western practitioners, who charge lower fees, when they cannot afford the services of the more trusted herbalist or diviner. Most Africans readily accept medication for external use but this is not useful in the treatment of HAT, as the treatment has to be injected. This slowed the rate at which treatment could be administered.

Resolutions and Rejection

Has the resolution for cooperation introduced by WHO in 1977 been implemented? The current WHO procedure for the control of HAT includes "mobile medical surveillance . . . fixed post medical surveillance [and] vector control" (WHO 1999) at the cost of 140 million dollars (US$) over five years. However, there is no mention of traditional medicine or research involving traditional medicine. Little progress has been made in the use of indigenous practitioners, especially healers. In the western state of Nigeria "76 percent of doctors indicated that they would never under any circumstances send a patient to a traditional healer for treatment" (Anyinam 1987:807). It would appear that the call for cooperation has gone largely unheard. The implications for the spread of HAT may be catastrophic.

Human African Trypanosomiasis threatens more than 55 million people in 36 countries of sub-Saharan Africa. Twenty-two of these countries are among the least developed in the world (WHO 1999). Many of these countries have suffered, or are suffering from civil war, drought, and famine, creating conditions that have enabled a rise in the number of cases of HAT. It has been estimated that "the current figure of sufferers in the Vanga Health Zone in Zaire [The Democratic Republic of Congo] shows a tenfold increase since 1992" (Fountain 1996). The WHO resolution has apparently failed.

Biomedical health practices have become the main focus in the eradication of HAT. In some countries affected by HAT, recent events have led to a collapse of the biomedical healthcare systems. In The Democratic Republic of Congo, civil war has resulted in the breakdown of healthcare and "the Catholic and Protestant missions ... are now the only healthcare providers in much of The Democratic Republic of Congo" (Ekwanzala *et al.* 1996:1427). If the numbers of traditional practitioners are decreasing, as suggested by Anyinam (1987), there will continue to be increases in the rates of HAT in rural areas. Traditional healers predominate in the delivery of health care in these areas. Without traditional healers there will continue to be decreased availability of any form of healthcare, as biomedical medicine is concentrated in the urban areas.

Conclusion

The relationship between biomedical and traditional medicine has been strained since the introduction of colonialism. The leaders of African countries do not want to be seen as encouraging a form of medicine that is not considered 'modern' by the Western world. In adhering to the standards placed upon them by the West, these countries are depriving themselves of a possible solution to their healthcare problems. The traditional practitioners could become valuable resources in building an effective but inexpensive (compared to biomedicine) system of healthcare delivery, which is a requirement if HAT is to be prevented from increasing at current rates.

The abilities of traditional practitioners are more readily accepted by health development programs if they closely resemble biomedical practitioners. Herbalists are considered the most likely allies in a combined healthcare approach. Their apothecaries of herbs and compounds may be of benefit to biomedical researchers. Empirical testing of the medicines may reveal potential benefits for drug companies in Western societies. Incorporation of biomedical medicine into the existing apothecary is considered a simple step by medical doctors (WHO 1999). The reluctance of herbalists to promote medicine they do not believe in is often ignored. It is still assumed that Western medicine is superior and should take precedence over African medicine, despite the costs to society.

The divination or prophecy healers do not fit into biomedical models as neatly as the herbalists. This decreases the chances that full co-operation between

biomedical and traditional medicine will ever occur. The biomedical model will never be accepted without a recognition of the cultural environment in which it must function. There has to be a recognition of why medical beliefs developed and the role played by traditional practitioners in contemporary society. Paternalistic ideas within the biomedical model have to be recognized and eliminated if there is ever to be success in combining both models to decrease HAT mortality.

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