A Forest Long Ago and Yesterday: What about Tomorrow?

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Introduction

I wish to start by thanking the Board of the Benjamin Oluwakayode Osuntokun Memorial Trust for inviting me to give a lecture in the series of Benjamin Oluwakayode Osuntokun Memorial Lectures. Although this is the third lecture in the series, its significance in being the first one in this new century compelled me to examine a little known aspect of this colossus of a man, called Kayode. Those of us who had the pleasure of working with Kayode Osuntokun marvelled at how he virtually committed his entire being to any and everything that he did, be it work, worship or play. Where did this man derive his seemingly endless energy and drive?

Some clues as to what helped to shape this phenomenal human being can be found in his comprehensive 60th birthday curriculum vitae (Osuntokun, 1995). For those who have not had the opportunity to read that document, Professor Osuntokun relates that his beloved mother, Madam Elizabeth Osuntokun, was very ill when she was 6 months pregnant with him. His father, David Osuntokun, invited the best traditional healers in his area to treat his dear wife. He told the healers that if she did not get better, they were to abort the foetus before his wife died. It was taboo in their traditional society for a woman to die during pregnancy.

The traditional healers, however, failed in both assignments. An evangelist, David Babalola, later visited the embattled and distraught husband and prayed for the young woman, and she recovered. 'The baby moved' in the womb. Three months later, Oluwakayode was born. As a baby, Kayode lived almost exclusively on breast milk and holy water. I suspect that if any of us had such a precarious pre-natal history, and became aware of the unusual circumstances later, we would likely develop an acute sense of mission and relentlessly pursue our set goals.

Early memories

Before we go any further, I would like to briefly recall some of my early memories of Kayode Osuntokun. He played a very good game of lawn tennis and represented the University College, Ibadan (UCI), the home of the 'Gay Adders' as the male undergraduates were then called. I never saw him on the cricket field. He was also a strong defender of the two girls in our class, but wisely kept his interest in one of them from our inimitable anatomy professor, Alastair Smith, who had a stranglehold on all medical students in the early days of UCI. To Professor Smith, the beginning of wisdom was a good knowledge of anatomy.

So it happened one afternoon, that one of the young female medical students was on her way to the tennis court to meet the 'defender' for a match. Her would-be opponent was in fact waiting by the corner of the Bookshop House, now the Council Secretariat of the University. He had the good fortune to spot Professor Smith's car and disappeared into the shadows of the building. However, she was right in the open, crossing the road in front of the bookshop, tennis racket in hand, when Professor Smith's Morris Minor passed by. There was a brief chat, after which Professor Smith warned the young medical student that lawn tennis and anatomy were incompatible. The tennis practice was abandoned.

The middle years

We next met years later, when as Dean of the Faculty of Medicine of the University of Ibadan (1974-1978), Professor Osuntokun, who had long since married his tennis partner, invited me to serve as the Sub-dean (Postgraduate) of the Faculty of Medicine as we knew it then. The duties of the Sub-dean (Postgraduate) and Chairman of the Faculty of the Postgraduate Committee, included drawing up the regulations governing the

organization and the execution of academic postgraduate programmes in the faculty. The committee also had to review and re-organize, as well as manage locally, the professional programmes of the National Postgraduate Medical College of Nigeria. It was during and after this close working relationship, when there were opportunities to really assess each other that our mutual respect grew and matured. Thereafter, we arranged to meet to discuss national and world issues, such as the place of the African in world history. It was in the course of one of these discussions, that the obvious question that must agitate the mind of every African intellectual inevitably cropped up: Why has the African apparently made so little, if any, intellectual contribution to the development of mankind? What follows is what we found to exist in our forest, about 3,500 years ago.

Historical Background

Long Ago: Ancient Egypt and Early Medical Practice

It is generally agreed that early civilization in ancient Egypt reached a relatively high level of sophistication. Basic human needs such as food, shelter, and clothing were adequately met, thus, there was more time for leisure and reflection. Ancient Egypt was also well known for its 'mystery schools' where priests doubled as doctors. These mystery schools not only served a religious purpose, the priests examined and tried to unravel puzzles of nature in order to treat common illnesses. Talented children of the rich and powerful and also those of the poor, studied in these temple schools. During the Pharaonic dynasties, many Pharaohs who recognized the importance of these schools and their teachers, established additional temples in major cities such as in Memphis, and later in Alexandria. Disciples of outstanding teachers generally established new schools or temples in memory of their departed teachers.

Imhotep, the black physician

During the third dynasty of the Pharaohs, around 2980 B.C., there existed a temple school in Memphis which was run by an accomplished black physician and architect known as Imhotep. It is reported that Imhotep was so famous that centuries after his death, sick people who went and slept in the shrine at his temple, and who dreamt of him, usually woke up to find that they were cured of their mental and/or physical ailments.

About 2000 years later, another famous Greek student, Hippocrates (460-375 B.C.), studied in the Temple of Imhotep. Imhotep's temple was reputed to be famous for a number of medical treatments, which included: the use of garlic, the test for female fertility (they called it test for sterility) and a method of treating jaw dislocation. This medical knowledge was written

down and taught in Imhotep's temple (Carlesberg Papyrus 4; Diop, 1981; Onyewuenyi, 1993).

Available evidence shows that Hippocrates copied verbatim and taught his students in Greece the techniques he learned in this famous temple in Memphis. The question arises, however, whether Hippocrates or his generation really knew much about Imhotep or acknowledged his achievements.

Doctors in ancient Egypt, in addition to being general practitioners, were also recognized for their expertise in special areas. Some specialized in diseases of the head, the gastro-intestinal tract, the eyes or the teeth, women's disorders and ante-natal care, and the practice of embalment (Diop, 1981; Mokhtar, 1981).

Ancient Egyptian influence on the development of Greek civilization

Practically all Greek intellectuals and philosophers, except Socrates, studied in the Egyptian mystery schools or were influenced by those who had studied there. Pythagoras, for instance, spent twenty-two years studying in Egypt before returning to establish his school in his native country, Greece. Aristotle did not only study in the Egyptian mystery schools, he also had the 'good' fortune of having a large collection of Egyptian documents (on papyri) given to him by his former pupil, Alexandria, son of Philip of Macedon, when he conquered Egypt and sacked and looted the libraries of these centres of learning. Some of the remaining materials in the libraries were moved to the libraries in the new city of Alexandria.

Unfortunately, many of these documents were lost or mixed up during their transfer, with the result that one portion of a document found its way to Alexandria, while the other part ended up in Greece. This is one explanation given for the disjointed nature of many of Aristotle's 400 (perhaps up to 1000)

manuscripts, that are characterized by sentences or paragraphs which end abruptly, and the juxtaposition of sentences which have no relationship.

The question being raised here today is: To whom should credit be given as the founder and patriarch of medical education and practice — Imhotep, or Hippocrates, the product of Imhotep's medical school?

Who were these ancient Egyptians?

As previously stated, ancient Egyptian civilization represented the state-of-the-art in societal order, religion, government, science, architecture, mathematics, astronomy, and military science. Their temple-schools attracted scholars from other states in the area and helped to spread Egyptian knowledge throughout the Mediterranean.

Who were these ancient Egyptians? Were they different from, or similar to, the present day Egyptians? Herodotus (480-425 B.C.), a famous Greek historian and a native of Halicarnassus - then in Asia Minor, but now in present-day Greece - described the people of Egypt as having woolly, coiled hair; broad flat noses; thick lips; and black skin. They were further characterized as being proud and often arrogant.

The Nile valley was a fertile land surrounded by arid and semi-arid regions. It was natural for peoples of neighbouring areas to go to Egypt to trade and settle. In this way, Semitic and other peoples moved to Egypt in significant numbers. Power was, however, controlled by the Nubians, who are believed to have been the first settlers of the Nile Valley in Egypt.

We should note that other centres of civilization sprang up later in Mesopotamia (present day Iraq), China and India.

We conclude this section by simply stating that black African people were the original inhabitants of ancient Egypt (Diop, 1981; Mokhtar, 1981), having migrated from their ancestral

home around the Great Lakes in Central Africa (Diop, 1981; Mokhtar, 1981; Onyewuenyi, 1993).

Yesterday: The great Zimbabwe

And yesterday? There is not much to stand up and cheer about. There are just a few flashes, like the ruins of Great Zimbabwe (1000-1500 A.D.). In 1871, a gold merchant/miner was searching for gold in the grasslands of Masvingo Province of present-day Zimbabwe. He found instead, the ruins of a complex stone enclosure made up of granite walls, stone walkways, dwelling houses (most made of granite), and huts, many of which were crumbling. Adjacent to these great Zimbabwe ruins was a hill complex, with some grand structures. Subsequent excavations conducted at the site by archaeologists and other technicians uncovered a large collection of beads (about 30,000), collections of African metal works, 'tons of arrow heads, axes and spears' and some hoes. There has been of course, the usual debate as to the origin(s) of the builders of the Great Zimbabwe structures. Naturally, exotic sources such as the builders of King Solomon's palace, or masons from the Queen of Sheba, or artisans imported from southern India, 'were strongly favoured.' It is now accepted, however, that the Great Zimbabwe is the site of an authentic civilization of a medieval African Kingdom. Unfortunately, I do not have information on the medical practices of the Great Zimbabwe Kingdom beyond the motifs and other symbols depicting fertility rites.

Timbuktu

The destruction of the university at Timbuktu has denied us much information on West Africa's contribution to human development during the golden era of the empires of Mali and Songhai. Timbuktu was the greatest commercial city in West

Africa for over 400 years, advantageously situated on a bend in the River Niger. Besides being an important centre of West African trade, it was noted for its intellectual community of Islamic scholars, jurists and writers. Indeed, books were said to be an important item of trade. When the Moroccan army of El Mansur sacked Timbuktu in 1591 (Davidson, 1970: 103), burning her ancient libraries, West Africa lost a valuable cache of writings which could have shed much light on the achievements of the time.

The slave trade era

Let us take another quantum leap in time to the painful period of the slave trade. From East Africa, across the atlantic, north eastwards to the Arabic peninsula (now usually called the Gulf states); Bonny and Badagry in Nigeria; Elmina and Cape Coast in Ghana; Goree Island in Senegal, (all on the West African coast); and from Zanzibar in Tanzania and Mombasa in Kenya (on the East African coast), our people, captured by their own people and Arab slavers, were sold into slavery and transported to other lands. This was the darkest period in our history. We should all determine that such degradation will never happen again. What about the dark colonial era, was it any better than the slave trade?

Our early medical pioneers

Towards the end of the period of the slave trade, providence smiled on West Africa, and sent us some outstanding medical pioneers, such as Dr. William Broughton Davies, Nathaniel King, Obadiah Johnson, John Randle, Charles Jenkins Lumpkin, Sodeinde Leigh-Sodipe, Oguntola Sapara, Orisadipe Obasa and the outstandingly intellectually productive James Africanus Beale Horton (Adeloye, 1983). Although Davies and Horton, as the first two pioneers, worked in a hostile and discriminatory

climate, they were always alert and alive to their responsibilities as representatives of African peoples. Horton was a prolific writer, producing in his short lifetime of 48 years, a thesis for an M.D. from Edinburgh University (1859); a monograph on guineaworm (*Dracunculus*) 1868; and his definitive work, the *Diseases of Tropical Climates and their Treatment* (1874), among others. Horton also believed in, and struggled hard to have a medical school established in Sierra Leone, to train students selected from the four anglophone colonies: the Gambia, Sierra Leone, Lagos and Cape Coast. The Secretary of State for the Colonies, on behalf of the British Government, however, rejected Horton's recommendation. The dream died.

The Health Challenges of Today

In any discussion of the health challenges of today, we cannot ignore the scourge of our time, the dreaded Acquired Immunodeficiency Syndrome (AIDS). It is attributed to infection by the human immunodeficiency virus (HIV). I believe that the first scientific document on this syndrome in Nigeria was issued from my office – Room 226 in the Haematology Department, University College Hospital (UCH), Ibadan – late in October 1985 to the Permanent Secretary, Federal Ministry of Health Lagos. It notified him of the impending epidemic and suggested that steps should be taken to anticipate the epidemic and minimize its impact. As no reply was received, another letter was sent direct to the Minister of Health, Professor Ransome-Kuti, who replied sometime later, inviting me to organize a seminar on the subject.

Our interest and involvement stemmed directly from our pioneering work on classical haemophilia, that is, deficiency of blood coagulation, Factor VIII and its sister disease, Christmas Disease (F.IX d). I pay sincere tribute to those people who challenged me with their problem right from the first minute that I stepped into UCH. Their smiles or those of their parents that hid the nagging anxiety of the dripping blood that would not stop, were enough incentive to keep us going until the bleeding did stop. It was in recognition of these efforts that we were elected to the Medical Advisory Board of the World Federation of Haemophilia and were invited, in August 1985, to Stockholm, Sweden to discuss the impact of AIDS on haemophilia communities worldwide. Fortunately, through a creative effort that solved and has continued to solve the problem of their cryoprecipitate needs, our haemophiliacs were not affected, but we do need to provide them with HIV and hepatitis-free blood and blood products. An efficient, nationally coordinated Blood Transfusion Service should be able to provide the products free

to the few haemophiliacs in Nigeria. There is no fairness, equity and justice in expecting those who cannot afford it to pay exorbitant health bills as is the current practice in our government and other health institutions.

HIV Infection and AIDS

The details of most of the spectacular scientific discoveries that have characterized this epidemic will not be discussed here. We shall, however, examine in some detail the impact that it is likely to have on some aspects of our individual, community and national lives.

The earliest days of the epidemic

The story of the discovery of AIDS is an object-lesson on the advantages of diligence in whatever we do. A drug technician called Sandra Ford, working at the Center for Disease Control (CDC), Atlanta, Georgia, USA, had the sole duty of sending out the drug, pentamidine, on request to doctors throughout the United States of America (USA). On February 1, 1981, she received a request for a supply of pentamidine for a patient in New York City who had pneumocystis carini pneumonia (PCP). This was strange because any disease caused by that particular organism occurred only in people whose immune systems were either severely depressed or destroyed completely. Over the next few weeks, she received many more requests for the same drug from physicians in New York and California. By some curious coincidence, all the patients were young male professionals. By now she knew that something strange was going on and drew her boss' attention to the development. Shortly afterwards, thanks to the phenomenal developments in science and technology that have taken place in the last century and raised awareness all around, this new phenomenon was shown to be due to infection

by a very slowly growing retrovirus which is now called the human immunodeficiency virus (HIV). It was initially called lymphocyte associated virus (LAV) by the French retrovirologist, Luc Montagnier and his colleagues of the Institut Pasteur in Paris, France. The American Scientist, Dr. Robert Gallo and his group at the United States National Cancer Institute (NCI) named the same organism Human T-lymphotrophic virus type III (HTLV-III). The epidemic characteristics of the infection were recognized quite early. Within three years of its initial appearance, the clinical manifestations of HIV infection, the principal modes of acquiring the infection and its dissemination were defined. The organism was isolated, its structure was defined and the major disease complexes identified. Tentative steps were taken to define the pathogenesis, that is, the ways and processes through which the disease complexes developed. Early isolation of the virus also made it easy to produce the early diagnostic reagents and appropriate equipment.

Early controversies

Unfortunately, with these early spectacular developments occurred the first of the destabilizing controversies in the HIV/AIDS saga. This had to do with who was the first to discover the virus. It has since been accepted that Professor Luc Montagnier of the Institut Pasteur, Paris, was the first to discover it. It is heartening to note, however, that despite the distraction caused by the above struggle, research still went on unhindered.

The second controversy concerned the origin of the virus, a controversy that has persisted till today. Curiously, Haiti was first suggested as its origin, but this suggestion was quickly dropped when the alert Haitian government firmly rejected it. The late dictator Mobutu Sese Seko of Zaire (now the Democratic Republic of Congo) was not that conscious, perhaps

his attention was elsewhere, and hapless Africa has been saddled with the yoke of being the origin of the virus since then. It was said to have come from the African green monkey, and a virus that is said to cause a disease in the green monkey similar to that in man has been reported. How the virus jumped from the monkey to man has not been satisfactorily explained. There was for instance, the ridiculous fabrication that some pygmies who live near the forest where the green monkeys dwell, used the animal's blood to enhance male potency before marriage and that was how the virus jumped the monkey-man gap. The group reputed to indulge in the practice was never found. Another view canvassed by the former Soviet Union and lately by Dr. Leonard Horowitz is that HIV is a product of biological warfare research. It has also been suggested that the virus contaminated a batch of poliomyelitis vaccines that was first used in Eastern Zaire in the 1950s, hence the high incidence of the infection in that area. The World Health Organization (WHO) has consistently and vigorously denied the latter suggestion.

With the successful labelling of Africa as the origin of the virus, however flawed the suggestion, and irrespective of where the epidemic blew up, no further research was carried out. With the label have come not only the stigmatization and prejudice that were initially associated with AIDS in the homosexual communities in North America, Western Europe, Australia, New Zealand, Israel, and among the Afrikaans of South Africa, etc., but also the understandable although unrealistic denial of a dangerous situation.

Unfortunately, the negative images initially linked with these fringe groups of Western societies have remained the hallmarks of HIV/AIDS. It is these images that were cynically, unfairly and unjustly transferred to describe the normal sexuality of the African, that have stalled progress in the acceptance of the dangers of the epidemic and have, therefore, inhibited the

adoption of a positive attitude towards its control in many African countries. We have to overcome this attitude to HIV/AIDS and move positively and effectively to combat the epidemic.

The sexual instinct constitutes a fundamental driving force among all species of living things, including man. Except in a negligible minority, expression of this instinct is normal. It is only among a very small minority of human beings that giving expression to this powerful force seems to be the only objective in life. Therefore, since this powerful drive is a normal constituent of human behaviour, its normal expression is acceptable social behaviour. Sexual intercourse between homosexuals and lesbians (the latter in some Western countries call themselves daughters of perpetual indulgence) is in my view, unacceptable.

The African HIV/AIDS scene

According to a 1997 Report (UNAIDS, 1997) by the group that monitors the progress of the AIDS pandemic, the data below show the trend in Africa. They may include some exaggeration and/or distortions, the extent of which is difficult to define.

1. It has been stated that two in every three persons who are HIV positive or have AIDS are African.
2. Of 530,000 children born with HIV, nine out of 10 are claimed to be African.
3. The likelihood of an African adult getting infected with HIV is 10 times greater than a North American adult, and 20 times greater than a Western European. The reason for this curious claim was not given.
4. Of 8.2 million children aged below five years whose mothers died of AIDS, 7.8 million (82%) are stated

to be African. (Monitoring the AIDS Pandemic (MAP) Report, 1997)

5. The total number of people with HIV/AIDS in 1997 was 30.6 million. Of this total 20.8 million were stated to be African!
6. UNAIDS stated that in 1997, 80 per cent of all female HIV infected persons in the world were African.
7. Heterosexual transmission was responsible for most of the infections in Africans. The evidence for this was not given.

Much of the above are extrapolations that are often tainted by prejudice. In spite of these exaggerations, the danger of AIDS is real and we have to deal decisively with it.

The Impact of HIV/AIDS

AIDS has tremendous impact on every aspect of life in any society that it affects. For instance, its impact on population, health, education, development and economic activities in the formal, informal and rural sectors where it is prevalent, are well established.

Population

The United Nations Department for Economic and Social Information and Political Analysis has estimated that, by the year 2005, there will be a total population loss of 11 million people from HIV/AIDS alone in some 15 African countries, if its prevalence exceeds 1 per cent of the population in each of them! The countries are: Benin, Burkina Faso, Burundi, Central African Republic, Congo, Côte d'Ivoire, Democratic Republic of the Congo (former Zaire), Kenya, Malawi, Mozambique,

Rwanda, Tanzania, Uganda, Zambia and Zimbabwe. The same source further states that in Kenya and Uganda, AIDS alone will cause an additional 1.5 million deaths in the same period. Life expectancy at birth in 13 of the 15 countries will be reduced to 50 instead of 53 years. In Zambia and Zimbabwe, the corresponding estimates are 47 instead of 67 years, and 51 instead of 66 years in the period 2000-2005! If these projections are correct, and there is no reason to believe otherwise, then HIV/AIDS will lead to a massive 'population loss'.

Health

HIV/AIDS will increase the direct cost of health care astronomically. For instance, the cost of treating an AIDS patient for one year in the USA with the present cocktail of AZT or related drugs and a combination of the protease inhibitors is about twelve thousand United States dollars (which is about ₦1,020,000.00). It is improbable that any African country, developing or semi-developed can bear such costs, particularly in view of the large number of AIDS patients in Africa. In the African 'AIDS belt', which also coincides with the area of high tourist activity, studies have shown that up to 80 per cent of the in-patients in the medical wards are AIDS patients. It should be noted that the cost of drugs required for treating the ubiquitous infection is additional to the amount stated above. The amount is not likely to include the cost of treating the increasing number of tuberculosis (TB) cases which are found among AIDS patients (up to 45% by some estimates). A significant number of these TB patients have drug-resistant infections.

One other aspect of the cost of HIV/AIDS is the toll that it takes on the health care personnel. A study of Mama Yemo Hospital in Kinshasa in the 1980s showed that 6.4 per cent of the 2,384 hospital staff were HIV positive! In another study in Southern Zambia, it was shown that the death rate among nurses

rose from 0.5 per cent in a year in 1980, to 2.7 per cent in 1991 (Ekanem, 1996). All the above are in addition to the usual health problems that accompany ailments such as malaria and worm infestations; non-infectious diseases like diabetes mellitus and hypertension; blood diseases such as anaemia and sickle cell; and malnutrition which are prevalent in these countries.

Education

We should constantly remind ourselves that HIV/AIDS affects people between the ages of 15 and 50 in most countries and this is economically and biologically the most productive group. Thus, when parents who have children in school are ill with AIDS, their children's education will be interrupted or worse still stop, because the parents can no longer pay the school fees. Sick people cannot work, or make enough money for the family's daily needs. The available money will be needed to pay the health bill for sick parents. Second, when the parents die, the orphaned children have to withdraw from school unless the state can support them, which is unlikely in impoverished economies. Third, most teachers are in the age bracket that is most affected by HIV/AIDS. Those of them who are infected with HIV will later fall ill and die. The teaching efficiency of the sick teachers will be reduced, replacements for the dead will not be easy to find and there will be a general reduction in the pool of available experience. We can thus see how HIV/AIDS can and has affected education. The eventual result is likely to be a lower standard of trained manpower available for development. This will definitely affect the development of the Africa of tomorrow – a depressing prospect for a region that has already fallen far behind other regions of the globe in terms of development.

The economic sector

The HIV/AIDS epidemic has had particularly severe effects in the areas of labour and productivity, and dramatic effects on the micro levels of the formal, informal and rural sectors of the

economy. The impact begins at the individual level with the illness of the worker. The cumulative effects are first recorded in lowered productivity of the concern. These have been carefully examined by different bodies such as the International Labour Organization (ILO) and the United Nations Economic Commission for Africa (UNECA). A recent UNECA study of the African Region was carried out in 1995. The impact of AIDS on the health and education of individuals has already been summarized. At the intermediate economic level, several studies have already been completed in many countries. For example, Ekanem, in a 1996 lecture quoted the results of one such study undertaken for the petroleum industry in Zambia, where it was shown that the medical bills of staff over a period of time amounted to 1.2 times the net profits of the company! Studies in Rwanda, Tanzania and Uganda have shown similar but less dramatic trends. Such distortions of a company's fortunes must raise questions of job security and discrimination against existing staff, and employment policies with respect to the HIV status of prospective staff. The AIDS epidemic has given rise to the question of pre-employment testing of prospective staff.

One other feature of large industrial concerns is the usual association with large population movements in the informal sector, wherever such concerns are located. Another feature of this informal sector is its usual dominance by women. These features are known to increase both the risk and spread of HIV/AIDS within the workforce and the rural population.

In Africa, the major occupation of the rural population is subsistence farming. One effect of a high incidence of HIV/AIDS in the agricultural sector has been found to be a decline in food production and supply, which affects both the rural and urban populations. It is thus clear that unless the state can import the food deficit, famine will result and have deleterious effects on both urban centres and rural populations. But can the States

afford to pay for this? This is another aspect of the tragedy of HIV/AIDS, and the inevitable cost that will follow our inexcusable negligence in the recent past and emphasizes the need for correct actions now.

When the situations above occur in many enterprises, including those of key sectors of a nation's economy, it is easy to see how HIV/AIDS can destroy that economy and lead to a collapse in its Gross Domestic Product (GDP).

The family unit

A typical Nigerian family unit consists of the husband, wife or wives, their children and members of the extended family (from both sides). When the husband contracts the HIV infection, he naturally infects the wife or wives. The reverse also happens although the relative contribution of each sex to the national total is unknown. With time, both parents will develop AIDS and die. When this tragedy strikes, the impact will be felt not only by the children, but also by the other members of the extended family. When the husband, who is usually the main support of the family, gets full-blown AIDS and dies, the family suffers a major tragedy; in some cases it disintegrates. If both parents die, the impact on the children can only be imagined.

The national scene

The first six (6) cases of AIDS announced to the nation in 1986 were clearly contracted outside the country. One of them was an unfortunate Nigerian who worked in an East African country for one of our government agencies. He died a very sick man shortly after arrival back home. Between then and now, how have we fared? Do we have a body of reliable prevalence data? Some prevalence data for 1987 and 1988 is summarized in tables 1 and 2 respectively.

Table 1. National HIV Data, 1987

Category	N	N + ve	% + ve
Patients	200	1	0.04
Blood donors	2507	2	0.07
Travellers/Others	89	0	0.00
Total	2796	3	0.12

Table 2. National HIV Data, 1988

Category	N	N + ve	% + ve
Patients	137	4	2.9
Blood donors	3317	31	0.93
Travellers/Others	135	4	2.9
Total	3589	39	1.08

Table 3. HIV Prevalence in Different Geo-political Zones 1999

Zones	Prevalence	N
South East	5.2	2,446
South West	3.5	3,469
North West	3.2	3,892
North East	4.2	3,535
North Central	7.0	4,158
South South	5.2	3,462
Total	5.4	20,962

Source: Federal Ministry of Health

The picture painted by these figures is clearly disturbing. We, however, need a more comprehensive picture and more reliable statistics. For instance, a recent national exercise in a

rural community in Akwa Ibom State indicated a prevalence rate of 13.3 per cent. This was based on a sample size of 300 pregnant women. However, another study, conducted in another rural area in the same state, gave a prevalence rate of 2.9 per cent among 340 volunteers (Essien et al., 1999). The national AIDS control programme has, in its report, acknowledged the limitations of the 1991, 1993, 1995 and the recent 1999 sentinel survey results. Government's acceptance that the situation is quite serious is welcome and should be followed by manifest deliberate efforts to arrest the epidemic. Although AIDS poses a serious threat to Nigeria, we need not panic or take measures that may portray the country as AIDS-infested.

Recommendations

The following actions are recommended. The campaign against HIV/AIDS should be intensified in a balanced manner that addresses the problems at hand objectively, yet without stigmatization. We must, however, preserve the desirable components of our culture and traditions. The situation in foreign countries where words such as *chocolate* and *condom* are used with the same frequency should not be allowed to creep into our culture. A balance and distinction ought to be kept.

Second, the campaign for a National Blood Transfusion Service needs to be vigorously pursued, until it is established. There has been a felt need for such a service since 1972 or earlier, especially as our nationals continue to receive HIV-infected blood daily! It may be that the percentage which the transfusion of infected blood contributes to our national HIV/AIDS burden is more than the 10 per cent that is attributed to this source in other countries. A blood transfusion service is thus an essential part of health care delivery. We plead with the Federal Ministry of Health, which has a listening and action

Minister, to ensure the establishment of a national blood transfusion service without any further delay.

Third, we ought to have a comprehensive clinical compendia of AIDS patients, prepared by specialists in different fields. We need equally detailed laboratory data based on the clinical material available, as well as detailed reliable epidemiological and virological data. For the latter, an appropriate virology laboratory with at least P4 facilities is needed. This has been contemplated since about the early 1980s, and is long overdue. More data above, than simply CD4, CD8 information, which do not correlate accurately with clinical data, are required. The recent findings in HIV co-receptors such as CCR3, CCR5 and CXCR4, some of which may be critical in virus entry into the CD4+cell, hold great promise for further work in HIV and SIV (*Science,* 1998: 280,825). With antigen isolates, we should be able to prepare at least some of our own diagnostic reagents.

Some Nigerian doctors, traditional healers and spiritualists have claimed therapeutic 'breakthroughs' in the treatment of AIDS. Some of those in the first two categories that satisfy the highest level of scientific criteria should be rigorously selected and their work evaluated. Strict scientific peer-reviewed criteria should be drawn up and widely publicized to assist new claimants assess themselves before submitting to scientific evaluation. The Nigerian Academy of Science should be assigned the duty and responsibility of defining the criteria and monitoring their evaluation. In other countries where such bodies exist, they are routinely assigned such duties. International science academies and similar organizations routinely consult with the Nigerian Academy of Science and seek its opinion on all relevant scientific matters. The Nigerian government and its agencies should follow their example.

Currently, new and more cost-effective agents, which are perhaps more effective for us, are being tried out: many of them

as international collaborative studies, though usually among industrialized countries. I am aware that the main criteria for invitation to participate in such studies are essentially appropriate laboratory expertise and equipment. Those Nigerians who are well trained and well equipped, should seek to participate at a meaningful level in these studies whilst efforts should be made to provide the appropriate local laboratory environment.

If statistics can be relied upon, Africans appear to be unduly susceptible to HIV-infection. If this supposition is correct, why is this so? It has been suggested that we fall prey so easily because our immune status has already been weakened by incessant infections, malnutrition, etc. Is this just a convenient explanation? Have we sufficiently studied the African immune system in relation to this epidemic? Have we checked these statistics? It is not sufficient just to reject them as incorrect, or to accept them with resignation and request international assistance; or as some Nigerians do, seek divine intervention and resort to prayers believing 'that God has taken control' and therefore, nothing else needs to be done. My reply to the last group is that God will not and has not taken control. He has, instead given us all the facilities we need to combat this epidemic. We need to accept our responsibility and play our part effectively.

The question of HIV transmission by blood-sucking insects such as mosquitoes and bed bugs is raised again and again at meetings and in several fora – although it tends to be played down in the powerful press that is obsessed with human sex and condom distribution. We now use the word *condom* freely. Is this healthy for our children's development? Should we not learn a lesson from the misuse of the gun by adults in some societies and how their children now misuse it to the chagrin of the adults?

General comments

Finally, let me make a few general comments on our Forest of Today and Tomorrow. Research is not a priority in our national budget and health research more so. Basic research is regarded as an activity of the affluent nations. We wrongly assume that the West can afford to investigate our problems and that the agenda of the affluent donor nations and ours, coincide. This logic is very faulty. The agenda usually do not. Rather, it is, more often than not, the poor and cash-strapped nations and peoples that almost always have to face difficult choices that require the results of well-conducted research (Salam, 1991).

Brain drain

Brain drain or brain power haemorrhage can be described as the loss of trained personnel from developing countries (including Nigeria) to the Western countries, the Gulf States and recently, to South Africa. Professor Osuntokun resisted the temptation to migrate. He had a choice, and the means to resist the temptation. Many did not and do not have such choices. With particular reference to our country, past and present governments have commented on this phenomenon. In the past, at least one committee was set up to investigate this problem, which indicates some level of government concern. There is little evidence that any concrete action followed that exercise.

At present, the extent and the scale of the problem are truly alarming. These days, it is quite commonplace for Nigerian Ph.D. candidates to leave the country for good, shortly after being awarded their degrees, even now when the quality of our degrees is suspect, and our graduates are often required to take qualifying examinations abroad. The Ph.D. migration still goes on unabated. It is essential to halt and reverse this trend of brain power export if Nigeria is not to lag behind other nations in the 21st century. This has to be carefully planned and organized to

create a more encouraging and accommodating climate for returnees. The intellectuals who have remained in Nigeria know that our community of academic scholars is very small when compared to the needs of our society. Compared with similar communities in Western countries, India and China, it is microscopic (Shils, 1972). It should be emphasized, however, as Professor Osuntokun did again and again, that the interests of Nigeria are paramount and deserve only the best.

Summary and Conclusion

Before making my concluding remarks, let me quote from the 1611 version of the King James Bible, Philippians 4 verse eight (similar concepts can be found in the Koran and in our traditional religion as spiritual truths tend to be universal):

> *Finally Brethren, whatsoever things are true, whatsoever things are honest, whatsoever things are just, whatsoever things are pure . . . lovely . . . and of good report, if there be any virtue and if there be any praise, think on these things.*

However, colleagues, ladies and gentlemen, in the last few centuries, it has been the published view, which we have sadly, only feebly resisted, that Africans, particularly Black Africans are more aptly described as follows:

> *. . . whatsoever things are bad, whatsoever things are ugly, whatsoever things are negative, if it can destroy the personality and permanently undermine human self esteem and dignity, then label it African.*

I know that racial pride, self-esteem and dignity prevented Professor Osuntokun from emigrating. Despite all the advantages he would have enjoyed as a researcher in the advanced countries,

he chose to remain in Nigeria. What choices will you, the generation of tomorrow, make to ensure that Africans are seen in a better light?

We have briefly examined human society in ancient Egypt around 3000 B.C. (our forest long ago) and its development, including the medical knowledge and expertise of our ancestors. We found that Imhotep, the black physician of excellence and an accomplished architect of ancient Egypt, profoundly influenced the development of the knowledge that shaped Greek civilization, including medical knowledge and practice, through his school and temple in Memphis. We note that Hippocrates (who developed a code of medical practice still followed by many doctors today) studied in that temple. We also found that among West African pioneers of medicine in the nineteenth century, James Africanus Horton (1835-1883) demonstrated commitment to excellence and hard work and confounded critics (our forest yesterday). In the closing decades of the 20th century, Professor Benjamin Oluwakayode Osuntokun has again demonstrated, like our ancestors long ago and yesterday, that commitment to excellence and hard work compels respect throughout the world and promotes human dignity.

The stupendous achievements of Professor Kayode Osuntokun speak loudly, not only of his natural endowments, but also of his competence and ability to successfully manage his time. We, on the other hand deceive and console ourselves, explaining away our sloppy time management by saying we are keeping 'African time'. This is unacceptable. Punctuality is a measure of societal development and its sense of responsibility. In recent weeks, Nigerian participants at conferences in some African countries were taken aback when they discovered that the programmes started on schedule, irrespective of the level of official government participation – everybody was on time!

This model is urged on our 'forest of tomorrow'. Let me also emphasize very strongly, that tomorrow demands an enabling environment with optimum infrastructural support, with everything utilized for the benefit of the society, not for individual opportunists.

For the Forest of Today and Tomorrow, there is the added threat posed by HIV/AIDS. It is a deadly enemy which must be fought with every weapon at our disposal. Corruption, indiscipline and laziness must be confronted. The race of today and tomorrow will be to conquer other planets and to engage in activities in nanometer scale and at femtosecond speed. Nigerians need to participate in this race actively and on an equal footing with other countries. We need to develop and conserve all the talent within our borders and create an environment which will encourage others to come and work here. Hard work has to be our motto. Our departed brother exalted the virtue of hard work. You must follow in his footsteps.

References

Adeloye A. 1983. *African Pioneers of Modern Medicine: Nigerian doctors of the nineteenth century*. Ibadan: University Press, 253 pp.

Cartwright FF, Biddiss MD. 1972. *Disease and history*. London: Rupert Hart-Davis, 5-52.

Davidson B. 1970. *The Lost Cities of Africa*. Boston: Little, Brown and Company.

Diop CA. 1981. Origin of the Ancient Egyptians, pp 27-83. In: *UNESCO General History of Africa*, Vol. 2. California: Heinemann, UNESCO.

Essien EM, I Saliu and I Ekpro. 1999. Report of the study of HIV sero-prevalence in Ikot Abasi, a rural community in Akwa Ibom State in Nigeria.

George H. 1996. Psychological aspects of AIDS. *Med. Int.* 57: 2352.

Lucas AO. 1997. Health Research for Human-kind. Benjamin Osuntokun Memorial Lecture WHO/RPS/ACHR - 34/1997, WHO, Geneva. 26 pp.

Mokhtar G. 1981. Introduction. In: *UNESCO General History of Africa*, Vol 2. California: Heinemann, UNESCO, pp 1-26.

Onyewuenyi IC. 1993. *The African Origin of Greek Philosophy: An exercise in Afrocentrism*. Nsukka: University of Nigeria Press, 320 pp.

Osuntokun BO. 1993. Human immunodeficiency virus and the nervous system: some aspects of the molecular pathology. *Afr. J. Med. Sci.* (22) 1.

Osuntokun BO. 1995. *Nunc dimitis* of Oluwakayode Osuntokun compiled for his 60th birthday. Ibadan: Wemilore Press.

Salako LA. 1998. *Then and now. Unravelling the mysteries of ill health through research*. Ibadan: Benjamin Oluwakayode Osuntokun Trust, 37 pp.

de Selincourt A. *Herodotus, the Histories. Book 2*: Translated, with an Introduction. London: Penguin Books, pp 102-175.

Shils E. 1972. *The Intellectuals and the Powers; and Other Essays*. Chicago: University of Chicago Press, pp 481.

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Professor B.O. Osuntokun's published works constitute a significant landmark in the history of the Medical School of the University of Ibadan. They illustrate the heights that can be attained by a vibrant intellect in a literally science-unfriendly environment. Kayode had never seen a Bunsen burner before he entered the University of Ibadan; he however rose to become one of Africa's most outstanding medical scientists. He was a scholar uniquely endowed with the gifts of profound erudition, dedication and prodigious energy.

An excellent performance in his undergraduate finals at Ibadan in 1961, launched him into a remarkable career in medicine. Tutelage under some of Britain's leading clinical scientists of the day (Professor Harold Scarborough in Cardiff and Professor Henry Miller in Newcastle) gave him a good foundation in Neurology and Membership of the British College of Physicians.

Returning to Ibadan in the mid-60's, he set out to put neurology in Africa on the map. First he described the natural history of a number of neurological disorders in Africa. Then he went further to painstakingly undertake a series of clinical and biochemical studies to increase the understanding of the aetiopathogenesis of an intriguing form of ataxic neuropathy peculiar to sub-Saharan Africa. He linked this to toxicity of cyanogenetic glucosides in cassava. He examined the neuropathies – epilepsy,

cerebrovascular disorders, migraine and diabetes mellitus – one by one, producing for each a classic treatise, with a tropical flavour, in some of the world's leading clinical and neurological journals. In subsequent years, he turned his focus to Community Neurology and the Dementias of the Elderly. Whether at conference presentations, guest lectures, in chapters of books or as part of the over 300 publications in scientific journals, Kayode spoke or wrote with unusual depth and clarity, making original observations which were a departure from established teaching.

In his global travels, he can best be described as the *Marco Polo of African Neurology,* for there was hardly a world capital he did not visit to give a lecture. Such intense scientific activity inevitably won him an array of prizes and distinctions, of which we can only name a few – The Sir Langley Memorial Prize for the best paper in Tropical Medicine (1968-71); The Murgatroyed Prize of the Royal College of Physicians of London for important contributions to science and the Practice of Medicine in the Tropics (1977); and The Dr. Charles R. Drew World Medical Award in 1989.

To these remarkable achievements we must add his foray into the wider turf of medical administration, medical education and health services. He served as the Provost of the famous Aro Neuropsychiatric Hospital and the Chief Medical Director of Nigeria's premier teaching hospital – The University College Hospital, Ibadan. He was also the Dean of the Ibadan Medical School from 1974 -78, during which there was a rapid expansion of undergraduate intake, physical consolidation and curricular development. He was also appointed to the WHO Global Advisory Committee on Health Research (GACHR) – the most

prestigious health research policy organ of the World Health Organization.

As a clinical scientist, Osuntokun's contributions to the work of the WHO will be difficult to surpass. He was Temporary Adviser, Short-term Consultant and a Member of Expert Committees in a wide variety of subjects – at the WHO Headquarters in Geneva (sixty visits in 20 years) and at all of the Regional offices. He straddled the vast expanse of WHO's activities like a colossus, eventually becoming the longest serving member and Chairman of the GACHR. His interventions as chairman of GACHR were invariably mature and sensible, always demonstrating a sound grasp of the subject and a humane perspective in proffering suggestions and solutions.

Back home in Nigeria, Professor Osuntokun's outstanding achievements were well acknowledged through the award of Officer of the Federal Republic (OFR) of Nigeria in 1978, and the Nigerian National Merit Award (NNMA) in 1984. It was largely through his academic and professional stature that Ibadan came to be designated by the Nigerian government as a Centre of Excellence in Neurosciences. Indeed, the Dementia Project which he was involved in at the time of his death, represents an excellent example of a cross-cultural collaborative effort between the University of Ibadan and Indiana University; it has attracted substantial funds from the National Institute of Health in Bethesda, Maryland, immense international prestige and has brought considerable epidemiological knowledge to Ibadan. The Dementia Project has come up with a number of fundamental observations in a virgin but critical area of research into the ageing process in a developing world milieu.

Professor Benjamin Oluwakayode Osuntokun is survived by his wife Olabopo – an accomplished Professor of Ophthalmology at the University of Ibadan – and five children, two of whom are medical doctors.