

Tropical medicine in practice. Polish-Nigerian bridge

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ABSTRACT

The purpose of this paper is to draw the attention of readers to culture, tradition and education in Nigeria. The author shares her own experience from a course on tropical medicine in Nigeria, held in the Institute of Tropical Medicine at the Madonna University in Elele.

Initiation of systematic cooperation between schools of higher education in the European Union and those in third countries is recommended, as well as promotion of dialogue and strengthening of

understanding between nations and cultures, which is one of the objectives of the Erasmus Mundus program adopted by the European Parliament. The cooperation with Madonna University may facilitate fulfilment of those priorities of the European Union in the scope of higher education, and initiate contacts that do not create frustration or mass migration, but develop intercultural dialogue.

Key words: tropical medicine, course, Nigeria

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INTRODUCTION

Nigeria, the Federal Republic of Nigeria, is a country in West Africa on the Gulf of Guinea. The name comes from the river Niger. The country's neighbours are Benin, Niger, Chad and Cameroon. Nigeria is the most highly populated country in Africa – there are approximately 141 million citizens. The country is characterised by various customs, languages and traditions from 250 ethnic groups. The most significant scourges present in Nigeria are malaria, HIV infection, tuberculosis and famine [1].

Madonna Institute of Tropical Medicine (Hygiene, Blood) and Pandemics, Madonna University

Tropical diseases occur in the tropics, and that is where they should be treated, in Institutes of Tropical Medicine. The Madonna University, with the African philosophy of its founder, is located in the right place for an Institute of Tropical Medicine. Tropical medicine and associated aspects are often a field of interest of institutes located outside Africa. The Madonna University is a Catholic university located in the very heart of rural areas of Western Africa, in Nigeria [2].

The Madonna Institute of Tropical Medicine (Hygiene, Blood) and Pandemics is an education and research institution operating at the Madonna University, founded by the Rev. Fr. E.M.P. Edeh, according to African metaphysics and philosophy. The Institute focuses on practical and effective charity for the well-being of mankind, and especially for the socially underprivileged in Africa. Tropical medicine is a science dealing with diseases prevalent in tropical countries, located between the Tropic of Cancer and the Tropic of Capricorn, which are circles of latitude on the globe at 23°26' north and south of the Equator. The lines demarcate the hottest region of the world. Tropical diseases are conditions occurring in tropical countries because of the living conditions, climate, hygienic and social conditions and diet of those places. The diseases include also conditions resulting from improper nutrition, measles, diphtheria, tuberculosis, typhoid fever, shigellosis, cholera, amoebiasis, tapeworm infestations and other helminthiases. Diseases spread in tropical countries by insects are malaria, yellow fever, sleeping sickness, leishmaniasis and many more. Exposure to strong sunlight and heavy rains causes increased prevalence of skin diseases, including tropical ulcers (sarcomas, carcinomas) and others [2].

The role of the Institute of Tropical Medicine

The Madonna Institute of Tropical Medicine (Hygiene, Blood) and Pandemics acts in an innovative way, due to its holistic approach to

research and medical care in tropical countries. Africa is located in the tropics, and yet the majority of Institutes of Tropical Medicine operating in Africa are based in Europe and America, from where they delegate their activity associated with health-related problems. The Madonna Institute of Tropical Medicine (Hygiene, Blood) and Pandemics is the first Institute of Tropical Medicine created by a private university – the Catholic Madonna University, founded by the Rev. Fr. Edeh. The Institute acts innovatively in the following areas:

1. Research on methods of eradication of pandemic diseases in Africa, instead of focusing on their control in Africa;
2. The approach to identification and solution of problems of tropical medicine consistent with problem-based learning (PBL) in the context of community, which reflects the Community Orientation Approach (COA).
3. Introduction and effectiveness of research on medicinal plants (ethnobotany) and their use in treatment of tropical diseases (ethnopharmacology) and creation of a medicinal plant garden for their long-term culture.
4. Extrapolation of rural values accepted for the majority of African regions for diagnostics, treatment and research on tropical diseases and hygiene [2].

Moreover:

1. Realization of research, trainings and practical application of tropical medicine (hygiene, blood) and pandemics in order to improve the health of the African population.
2. Development of a strategy of combating tropical blood diseases and pandemic diseases by adoption of a realistic grassroots perspective.
3. Development of a strategy for the validation of medicinal plants and their use in treatment of tropical diseases and other diseases present in Africa.
4. Interaction with traditional African medicine in order to choose methods that provide satisfactory therapeutic outcomes.
5. Medical and scientific publications.
6. Organisation of conferences, seminars, symposiums and workshops on tropical medicine and hygiene, in order to disseminate results of scientific research carried out by the Institute, and for promotion of the Madonna University, with the down-to-earth philosophy of its founder, Rev. Fr. Counsellor Prof. E.M.P. Edeh.
7. Development of strategies regarding environmental factors and issues that cause and exacerbate tropical diseases (e.g. malaria, helminthiasis).

8. Research and education through workshops and development of tropical medicine and hygiene. Foundation of African plant gardens and consequent development of ethnobotany and ethnopharmacology.
9. International cooperation and participation in work carried out by similar foreign institutes in order to maintain and globalize standards through scientific exchange, seminars and conferences.
10. Environmental hygiene is one of the most important issues in tropical Africa. Education and trainings for Africans regarding the importance of a clean environment for the prevention of tropical diseases are important functions of the Institute [2].

Comprehensive, professional medical care, research and trainings

The Institute of Tropical Medicine is a comprehensive healthcare, research and training centre based on the principle "Blood is life". That means that blood constitutes the main source of diagnostics, treatment and monitoring of diseases. Therefore, the main aim of the centre is to provide medical care and carry out research through:

- a professional approach to tropical medicine and pandemics on an expert level
- research: It is an integral and important element of the centre, facilitating diagnosis and treatment, as well as monitoring and healthcare, promoting educational and research-based projects of the Madonna University.
- training. A centre of that magnitude may be best sustained by training its future employees in required specialities, and ensuring national education in those areas that the centre focuses on – tropical diseases and pandemics.
- treatment. The centre carries out diagnostic procedures for the detection of tropical diseases, pandemics of blood-borne and similar diseases. In consequence, an appropriate and cost-effective treatment is possible [2].

Blood and pandemics – main areas of the Institute's interest

Approximately 99% of diseases are diagnosed or controlled based on blood. "Blood is life". Blood constitutes the main carrier allowing diagnostics, treatment and monitoring of diseases [2].

Blood itself is associated with some diseases:

- deficiencies (anaemia, thrombocytopenia, leucopenia, etc.), commonly occurring in the tropics

- excesses (policithraemia, thrombocytosis, leucocytosis, leukaemia) associated with blood- and myelo-proliferative disorders caused by tropical viruses (hepatitis, Epstein-Barr, cytomegalovirus, HIV, etc.).

Those abnormal deficiencies and excesses may be benign or malignant, requiring an appropriate chemotherapeutic approach consistent with international protocols, which work poorly in tropical Africa because of logistic and site-related shortages, and because of the fact that medicinal agents are too expensive for social and economic conditions in Africa [2,3].

Diseases present in Africa on a pandemic scale are malaria (and other parasitic blood conditions), HIV/AIDS (and other viral diseases). Those are common diseases, and their diagnostics, treatment and monitoring involve blood samples. Combined, those diseases have an apocalyptic scale [3].

- Systemic diseases of main organs (kidneys, liver, pancreas, spleen, thyroid gland, etc.) are diagnosed based on chemical blood tests (using biochemical analysers). Diagnosis makes it possible to treat affected patients. The majority of tropical diseases lead to systemic complications, also involving the primary organs. In some cases, malignant lesions develop, including breast carcinomas, sarcomas and lymphomas.
- HIV/AIDS, hepatitis, cytomegaly (CMV), the Epstein-Barr (EBV) virus and other viral diseases typical for Africa are diagnosed, treated and monitored with blood. Lymphoproliferative diseases associated with EBV, such as Burkitt's lymphoma, are very common in the tropics and are associated with malaria. Elephantiasis and leg ulcers are very common.
- Tuberculosis is intensified by poverty, overpopulation of poorly-constructed homes, and poor hygienic conditions.
- Hemoglobinopathies, and especially sickle cell anaemia, constitute an important clinical and social element in Africa. An association of people combating sickle cell anaemia (patients' parents) is a very important element of the Institute. The organisation, as well as other organisations connected to the problems of blood diseases (e.g. Association for combating leukaemia), offer their support for the Institute [2].

Transfusion medicine is an important discipline in medical science dealt with by the Institute. Blood and blood products are used for treatment of serious diseases associated with deficiencies of one or more types of blood cells. Every Institute of Tropical Medicine in Africa has to have a properly equipped blood transfusion unit, able to provide selection and transfusion of "clean" blood and blood products. Transfusions are often used for elimination of

complications associated with the hematopoietic system. In Africa, the problem of selection of compatible donors is much more complicated, which is a result of the common occurrence of infections (bacterial and viral) that could be transferred from a donor to a recipient. This is a serious problem of tropical medicine.

Intravenous administration of specific chemotherapeutic agents (infusions) in order to treat cases of blood carcinomas (leukaemia, lymphomas, multiple myeloma, etc.) and other oncologic diseases (cervical, breast, uterine carcinoma, etc.) commonly occurring in Africa is also realised in the Institute [2]. Monitoring of treatment is based on blood sample tests, in order to evaluate the expected progression of a disease according to appropriate chemotherapeutic protocols. Drugs used for therapy are distributed with blood, and are monitored by blood sample tests. Therefore, blood constitutes a significant and indispensable element of tropical medicine in the Institute [2].

Besides, the characteristic social and economic situation of Nigeria should be taken into account [4]. Chemotherapy is expensive, but the conditions of its application are simple, and monitoring requires the attention of specialists cooperating on the international scale and the exchange of experts. There are many patients with leukaemia, multiple myeloma, or sickle cell anemia, and they do not know where to turn for specialized help. A basic role of the Institute is to follow up on patients diagnosed and/or treated abroad and sent back home. The role of the Institute is a crucial one, and requires support (financial, material, cooperation and partnership) for its effective operation and the well-being of mankind/community, through the practical and effective implementation of the charity mission according to the African philosophy of Fr. Edeh [2].

Basic healthcare approach to diagnostics of malaria, anaemia, sickle cell anaemia, HIV/AIDS, tuberculosis

The diseases that most seriously affect the general health condition of African children and adults are malaria, sickle cell anemia and HIV/AIDS [3, 5, 6].

Negligence regarding basic and essential diagnostic laboratories and easy access to clinical procedures in the scope of basic healthcare for patients suffering from the raging trinity of the most dangerous diseases in Africa is completely incomprehensible.

Anemia is their common denominator – an initial symptom and complication of malaria, infestation with parasitic worms and other parasites, and of HIV/AIDS [7,8]. Therefore, the Department of Blood Therapy, able to deal with needs resulting

from complications of tropical diseases, is the crucial element of the Institute of Tropical Medicine.

However, in the general approach to healthcare, simple laboratory tests and clinical evaluations regarding haemoglobin level measurement for detection of anaemia, microscopic blood examinations for detection of sickle-cell anaemia, and blood smears for detection of malaria-causing parasites are almost inaccessible as an element of routine care for the majority of institutions in Africa. The simplest practical methods are missing. Workshops and seminars regarding those areas completely put aside the problem of basic healthcare diagnostics [2].

Future

On its way to perfection and maximization of medical care, the Institute of Tropical Medicine has the following main objectives:

Training of medical personnel in relation to the basic approach to:

- Diagnostics and evaluation of anemia
- Diagnostics and evaluation of malaria
- Diagnostics and evaluation of HIV/AIDS
- Practical performance of venous access and use of vascular access (veins and arteries) for diagnostic purposes and treatment of tropical diseases.
- Blood collection for laboratory tests and giving infusions of medicinal products, including blood and blood products.

In that scope, support for the Institute may take the form of cooperation, technical and professional support, and help from individual experts, groups and organisations in developed countries [2].

In August 2010, students of the Medical University in Białystok, with a tutor from the “Tropik” Student Scientific Group, participated in a month-long course on tropical medicine at the Institute of Tropical Medicine at the Madonna University in Nigeria. The program of the course included the following topics: Introduction to tropical medicine and social medicine (definition and scope); Clinical presentation of patients with malaria and other tropical diseases; Visit to Okija and the Awomama health centre; Laboratory practice in malaria diagnostics; Malignant diseases in the tropics; Clinical presentation of patients with malignant diseases (solid tumours); Environmental and social factors intensifying the prevalence of malaria and other tropical diseases; Factors causing higher mortality of mothers in tropical countries; Mother and child infections. Factors favouring a higher level of infection in the tropics; Infectious and non-infectious diseases; Ethno-botany and ethno-pharmacology (a visit to healers using traditional methods); Tropical cardiology. Factors influencing cardiac diseases in the tropics;

Snakebite therapy in the tropics; Public Health in the tropics; a visit to the Museum of Public Health; Health-related implications of filariasis for a person in the tropics; The effect of nutrition and nutritional disorders in the tropics; Evaluation and therapy of eye injuries in patients admitted to the Ophthalmology Department at the Madonna University hospital in Elele; Projects regarding tropical diseases [9].

The students and their tutor also participated in a seminar on malaria, held at the Madonna University Campus. The program of the seminar included the following topics: The malaria burden; Combating malaria. What was done and what should be done. The role of government and non-governmental organisations; How economic it is to treat malaria in Africa?; Traps and misplaced priorities of the current strategy for combating malaria; Is the African analytical approach to malaria a good solution? – the role of African medical practice; The role of traditional medicine in the fight against malaria.

CONCLUSIONS

Initiation of systematic cooperation between schools of higher education in the European Union and those in third countries is recommended, as well as promotion of dialogue and strengthening of the understanding between nations and cultures, which is one of the objectives of the Erasmus Mundus program adopted by the European Parliament. One of the priorities of this program is promoting and strengthening the positive image of higher education in the European Union. The Erasmus Mundus program, arising out of the tradition of European cooperation, provides students from third countries the possibility to study at European schools of higher education and to obtain scholarships for research at partner schools. The cooperation with Madonna University may facilitate fulfillment of those priorities of the European Union in the scope of higher education, and initiate contacts who do not create frustration or mass migration, but develop intercultural dialogue.

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