

ROADS TO HEALTH IN NIGERIA – UNDERSTANDING THE INTERSECTION OF CULTURE AND HEALING

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The most important attribute for which we all aspire as human beings is good health because it enables us to undertake different forms of activities of daily living. The emergence of scientific knowledge in Western societies has enabled us to explore and define several parameters of “health” by drawing boundaries around factors that are known to impact the achievement of good health. For example, the World Health Organization defined health by taking physical and psychological factors into consideration. The definition of health also included a caveat that says “not merely the absence of sickness.” This definition has guided scientists and health care providers in the Western world in the development of health care programs in non-Western societies. However, ethnomedical beliefs about the cause(s) of illness have given rise to alternative theories of health, sickness, and treatment approaches in the developing world. Thus, there is another side to the story.

Much of the global population, in developing countries, live in rural settings where the knowledge of health, sickness, and care have survived centuries of practice and experience. The definition of health in these settings tends to orient toward cultural beliefs, traditional practices, and social relationships. The ability to get up in the morning and provide for the family becomes more important than the abstract measures of well-being in Western societies. Greater importance is accorded to the role an individual fulfills in the community, for example, as an elder, a priest, a farmer, a homemaker, and so on. In other words, a biological process observed in one culture may be given a different meaning and interpretation in another culture. For example, in the Western world, obesity is viewed in the “culture of biomedical science” as a precursor to adverse health conditions. Among the Ibibio and Efik tribes of Nigeria, women are deliberately fattened in seclusion to ensure fertility before marriage. In some cultures, obesity may be viewed as evidence of wealth and good living. Therefore, health care activities and associated support systems are rooted in the cultural environment of the society in which they exist and are sustained. Health care activities do not occur in a vacuum in any society. Therefore, and for reasons of effectiveness in the delivery of Western-style health services in the developing world, health may be defined actively as “the ability of an individual to fulfill his or her social obligations in accordance with the prevailing beliefs and cultural environment.”

Invariably, although biomedicine is the dominant medical system in Western societies, traditional medicine or ethnomedicine is often the first port of call for patients in developing countries such as Nigeria. The 2 medical systems represent, and are influenced by, the cultural environment in which they exist. On one hand, biomedicine is very effective in the treatment of objective, measurable disease conditions. On the other hand, ethnomedicine is effective in the management of illness conditions or the experience of disease states. Nevertheless, an attempt to supplant one system of care with

another from a different cultural environment could pose enormous challenges in non-Western societies. In general, we, as human beings, are guided in our health care decisions by past experiences, family and friends, social networks, cultural beliefs, customs, tradition, professional knowledge, and intuition. No medical system has been shown to address all of these elements, hence the need for collaboration, acceptance, and partnership between all systems of care in cultural communities. In Nigeria, the road to health is incomplete without an examination of the intersection of culture and healing. Perhaps, mutual exclusiveness, rather than inclusiveness, of the 2 dominant health systems is the greatest obstacle to health in Nigeria. **Key words:** clinical research Nigeria, clinical trial, developing country. **Disclosure of Interest:** None declared.

BOOSTING THE CD₄ COUNT IN HIV INFECTION: COMPARATIVE EFFECTS OF HIGHLY ACTIVE ANTI-RETROVIRAL THERAPY (HAART) AND DIFFERENT MODALITIES OF PHYSICAL EXERCISE ON BIOMARKERS OF IMMUNITY

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Background: A decline in the CD₄ count is a common feature in HIV/AIDS, suggesting a compromise in immunity of patients. In response, highly active antiretroviral therapy (HAART) is prescribed to slow-down a diminution in the CD₄ count and risk of AIDS-related malignancies. However, exercise may improve both the utility and population of innate immune cell components, and may be beneficial for patients with HIV infection. Comparing the effects of different exercises against HAART, on CD₄ count, helps in understanding the role and evidence-based application of exercises to ameliorate immune deficiency.

Methods: Eighty-nine patients attending the HIV clinic at Enugu State University Teaching Hospital Parklane, Enugu, were studied in a single-blind, randomized controlled trial. The study measured the response of the patients' CD₄ count before and after 6 weeks of moderate-intensity aerobic (MIA) exercises, progressive resistance (PRE) exercises, and without exercise (control), involving subgroups of patients on HAART and HAART naive, respectively. All patients gave written informed consent after ethical approval was obtained and were educated on the use of the Borg rating of perceived exertion scale. They exercised at a rating of perceived exertion of 10 to 13 (interpreted as light to somewhat difficult) thrice weekly, at 30 minutes per session. Data collected were analyzed by using repeated ANOVA and least significant difference for post hoc comparison at $P < 0.05$.

Results: There was a significant “within-subject” interaction effect for exercise and CD₄ count ($P < 0.0001$) such that the CD₄ count increased in all patients (HAART and HAART naive) on exercise (MIA and PRE) and decreased in patients who did not exercise, with equal effect size ($d = 0.37$), respectively. The highest positive and negative change factor for CD₄ count was recorded in the control group that was on HAART (19.68%) and the MIA exercise group that were HAART-naive (–17.76%). However, whereas the PRE and MIA HAART and HAART-naive exercise subgroups recorded increases in CD₄ count, the HAART and HAART-naive control subgroups recorded decreases in CD₄ count.

Conclusions: These results suggest that an exercise (MIA and PRE) prescription for patients on HAART boosts their CD₄ count. Importantly, CD₄ count may be boosted more by MIA than by PRE exercises in patients on HAART and HAART-naive, respectively. The change factor suggests supports this conclusion and the effect size are of clinical significance.

Key words: clinical research Nigeria, clinical trial, developing country, HAART, HIV.

Disclosure of Interest: None declared.

ALDOSE REDUCTASE INHIBITORY POTENTIAL AND ANTI-CATARACT ACTIVITY OF *PUNICA GRANATUM* FRUIT EXTRACT

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Background: Aldose reductase (AR) plays a pivotal role in the polyol pathway. In the diabetic condition, it is found to cause accumulation of polyol in lens fibers, causing influx of water and generation of osmotic stress leading to sugar cataracts. The objective of this study was to evaluate the AR inhibitory activity and anticataract activity of methanolic extract of *Punica granatum* Linn. fruit (MPGF).

Methods: AR inhibitory activity was evaluated in vitro in goat lenses. For the cataract model, goat lenses were incubated in artificial aqueous humor containing 55 mM of glucose with MPGF in different concentrations at room temperature for 72 hours. Opacification of the lens was assessed by counting the number of squares when placed over a graph paper, and biochemical parameters were estimated.

Results: MPGF exhibited in vitro AR inhibition activity with an IC₅₀ of 300.43 (4.36) µg/mL. Glucose-induced opacification of the goat lens began 24 hours after incubation and was completed in 72 hours. Cataractous lenses showed higher malondialdehyde and lower reduced glutathione, superoxide dismutase, and total proteins. Lenses treated with MPGF prevented formation and progress of cataract by glucose, as evidenced by biochemical parameters.

Conclusions: MPGF prevented cataract formation due to inhibition of the AR enzyme.

Key words: anticataract activity of *Punica granatum* fruit extract.

Disclosure of Interest: None declared.

COST-EFFECTIVENESS STUDY OF ANTIHYPERTENSIVE DRUGS IN MUMBAI, INDIA

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Background: Hypertension is a serious global public health problem. It accounts for 10% of all deaths in India and is the leading noncommunicable disease.¹ Recent studies have shown that the prevalence of hypertension is 25% in urban and 10% in rural people in India.² It exerts a substantial public health burden on cardiovascular health status and health care systems in India.³ Antihypertensive treatment effectively reduces hypertension-related morbidity and mortality.¹ The cost of medications has always been a barrier to effective treatment. The increasing prevalence of hypertension requires use of cost-effective treatment for the effective management of the disease.

Objectives: The present study assesses the cost-effectiveness of antihypertensive drugs in patients with hypertension from Mumbai, India.

Methods: A prospective cross-sectional study was conducted to assess the cost-effectiveness of antihypertensive drugs. Face-to-face interviews were conducted by using a validated questionnaire in a

total of 136 (66 males, 70 females) patients with hypertension from F-North Ward, Mumbai, India. Cost-effectiveness was determined on the basis of a drug's cost, efficacy, adverse drug reactions, safety of administration, frequency of administration, and bioavailability. **Results:** Atenolol was most cost-effective (international normalized ratio [INR]: 5.5/unit of effectiveness), followed by the amlodipine + losartan combination (INR: 5.6/unit of effectiveness) and amlodipine (INR: 6.3/unit of effectiveness) in the present study. Thirty-eight (28%) patients received combination therapy. Lisinopril prescribed to 16 (11.8%) patients was the least cost-effective drug (INR: 17.2/unit of effectiveness).

Conclusions: Prescriptions of cost-effective antihypertensive drugs (73.5%) were more common than less cost-effective antihypertensive drugs (26.5%) in hypertensive patients from Mumbai, India. Most of the patients (72%) were prescribed monotherapy in the treatment of hypertension.

Key words: antihypertensive, cost-effectiveness, hypertension, India.

Disclosure of Interest: None declared.

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COST-EFFECTIVENESS STUDY OF ANTIDIABETIC DRUGS IN TYPE 2 DIABETES MELLITUS PATIENTS FROM MUMBAI, INDIA

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Background: Diabetes is fast gaining the status of a potential epidemic in India, with >62 million individuals currently diagnosed with the disease.¹ India currently faces an uncertain future in relation to the potential burden that diabetes may impose on the country. An estimated US\$ 2.2 billion would be needed to sufficiently treat all cases of type 2 diabetes mellitus (T2DM) in India.² Many interventions can reduce the burden of this disease. However, health care resources are limited; thus, interventions for diabetes treatment should be prioritized.

Objectives: The present study assesses the cost-effectiveness of antidiabetic drugs in patients with T2DM from Mumbai, India.

Methods: A prospective cross-sectional study was performed to assess the cost-effectiveness of antidiabetic drugs in patients with T2DM. Face-to-face interviews were conducted by using a validated questionnaire in a total of 152 (76 males, 76 females) patients with T2DM from F-North Ward, Mumbai, India. Cost-effectiveness was determined on the basis of a drug's cost, efficacy, adverse drug reactions, safety of administration, frequency of administration, and bioavailability.

Results: The glimepiride plus pioglitazone combination was the most cost-effective (international normalized ratio [INR]: 3.7/unit of effectiveness), followed by glimepiride (INR: 6.6/unit of effectiveness) prescribed in nonobese patients with T2DM. Glimepiride plus metformin was the most cost-effective (INR: 5.9/unit of effectiveness) followed by metformin (INR: 6.7/unit of effectiveness) prescribed in