



Available online at www.ijtmrph.org

INTERNATIONAL JOURNAL OF TRANSLATIONAL
MEDICAL RESEARCH AND PUBLIC HEALTH
ISSN: 2576-9499 (Online)
ISSN: 2576-9502 (Print)
DOI: 10.21106/ijtmrph.71

CONFERENCE REPORT

Book of Abstracts: 3rd International Congress on Health Sciences and Technology, School of Health Technology, Federal University of Technology Owerri, Nigeria, 8-11 August, 2018

Evangeline T. Oparaocha, PhD, FAIPH¹;✉ Precious Okechukwu Eteike, MBBS, MPH²

¹Office of the Dean, School of Health Technology, Federal University of Technology Owerri, Imo State, Nigeria; ²Department of Public health, School of Health Technology, Federal University of Technology, Owerri, Imo State, Nigeria

✉ **Corresponding author email:** tochievans@yahoo.com

ABSTRACT

The International Congress on Health Sciences and Technology is an annual event. In 2017, the second in the series of the Congress addressed several challenges in health with the theme “*Appropriate Technologies for Health and Disease: An Innovative Approach to Drive Sustainable Healthcare Delivery.*” The success of the deliberations opened a new vista of challenge which informed the choice of this year’s theme: “*Innovative Technologies for Disease Prevention and Wellness Promotion.*”

The theme became essential with the hindsight of the ravaging onslaught of preventable diseases, such as malaria, HIV/AIDS, diabetes, high blood pressure, kidney and liver diseases, ocular and dental diseases, to mention but a few, against humanity. The discourse on the scientific papers presented by renowned scholars from inside and outside Nigeria revolved around the adaptation of the ancient dictum, “Prevention is better than cure.” The third Congress critically examined, discussed, evaluated and proffered solutions to discovering innovative approaches, using new technologies to address the fundamental health problems of developing countries, in particular, Nigeria. Papers delivered at the Congress covered all aspects of public health.

With so many people dying of preventable diseases in Nigeria and around the African continent, the immense benefits of the Congress can rightly be decided. Leaning on very poor resources, Nigeria and the whole of Africa need to tackle health issues at the very primary stage, which hinges on prevention and wellness promotion, and hence the theme.

The yearly Congress is a welcome development which targets the local health needs of communities in Nigeria. We are anxiously looking forward to the fourth in the series which will take place from 7th to 9th of August, 2019. We welcome every willing participant!

Section A: Epidemiology and Disease Prevention and Control

ABSTRACT 01: PREVALENCE AND AWARENESS OF GLAUCOMA IN EZINIHITE MBAISE L.G.A, IMO STATE, NIGERIA

Caroline Okeke, MPH¹ and Evangeline T. Oparaocha, PhD¹✉

¹Department Public Health, School of Health Technology, Federal University of Technology, Owerri, Imo State Nigeria.

✉ **Corresponding author:** Evangeline Oparaocha: email: tochievan@yahoo.com

Background: Glaucoma disease that damages the optic nerve represents a major cause of vision loss throughout the world. Globally, about 314 million people are visually impaired while 45 million of them are blind, with 87% of the visually impaired living in the developing countries, including Nigeria. This study determined the prevalence and awareness of glaucoma in Ezinihitte Mbaise Local Government Area (LGA) of Imo State, Nigeria.

Methods: The cross-sectional, community based survey was conducted in 5 communities of the 15 Autonomous Communities in Ezinihitte Mbaise L.G.A of Imo State, Nigeria. Through random sampling, 650 adults (130 each from the 5 selected Autonomous Communities), who were 30 years and above and gave their consent, were selected from the total population of 94,005 in the LGA and screened for glaucoma. Three test procedures were used for the screening; Visual Acuity, Tonometry and Ophthalmoscopy, and these were conducted on each selected subject.

Results: Out of the 650 subjects screened, 52 persons (8.0%) were positive for glaucoma, and out of all the socio-demographic characteristics, only age was found to have a significant ($p < 0.05$) positive, linear relationship with the prevalence of glaucoma in the studied area. Data collected further revealed that the awareness level on risk factors of glaucoma among the studied group was poor, which had a significant ($p < 0.05$) negative influence on the disease prevalence in the area.

Conclusion and Implications for Translation: There is a need to mount a serious and sustained awareness campaign in the area to help adults of 30 years and above seek glaucoma screening early enough and thus reduce the incidence of the disease and its accompanying vision loss.

Keywords: Glaucoma • Prevalence • Screening • Ezinihitte-Mbaise • Nigeria

ABSTRACT 02: ASSESSMENT OF SAFETY PRACTICES AMONG WORKERS IN AN INDIGENOUS OIL PRODUCING COMPANY: A CASE STUDY OF CONOIL NIGERIA LIMITED

Fidelis O. Onosiwe, MPH¹ and Evangeline T. Oparaocha, PhD¹

¹Department of Public Health, School of Health Technology, Federal University of Technology, Owerri, Imo State Nigeria.

Corresponding author: Evangeline Oparaocha, tochievan@yahoo.com

Background: Oil and gas production is the most lucrative business in Nigeria, but the industry can be hazardous with a lot of safety challenges for workers. This descriptive survey assessed the safety practices among workers in Conoil Nigeria Limited, an indigenous oil producing establishment.

Methods: Using Port Harcourt and Warri branches with a total population of 137 senior and junior employees, systematic sampling technique was adopted to select 102 (74.5%) of the total number of workers for the survey. A well structured and validated questionnaire with a 4-point-likert scale was used to obtain information from the subjects. In addition, an observation checklist was used to assess the availability of safety equipment in the establishment.

Results: Results obtained showed that the company has key safety devices, but compliance with use among the studied workers was below 50% with most of the equipment sighted. While over 65% of the workers used hand gloves, safety boots and overalls, less than 50% made use of their helmets, ear muff and nose masks. The greatest

hazards faced by the workers were physical hazards (29.9%), followed by chemical hazards (26.8%), while the least were psychosocial hazards (8.9%). On integration of new technologies and innovations as well as training of workers on safety practices, (both of which negatively impact worker safety) a significant ($p < 0.05$) number of the respondents rated the company low.

Conclusion and Implications for Translation: Safety gaps still exist in some indigenous oil and gas establishments, hence there is urgent need for facility upgrade and industrial health policies to ensure the abatement of these hazards and mitigation of associated health risks. Such efforts which will provide safer facilities, and a healthier more secure work environment at indigenous oil industries in Nigeria.

Keywords: Safety • Workers • Indigenous Oil Company • Nigeria

ABSTRACT 03: EPIDEMIOLOGY AND PATTERN OF CONGENITAL CLUBFOOT SYNDROME IN IMO STATE, SOUTHEAST NIGERIA

Solomon N. Ukibe, MBBS, PhD^{1✉}; **Jervas Ekezie** PhD²; **Chukwubike U. Okeke**, PhD¹; **Chisomaga C. Eke**, MSc²; **Tochukwu N. Ugorji**, MSc¹; **Cynthia O. Onyejekwe**, B.Tech¹

¹Department of Prosthetics and Orthotics, School of Health Technology, Federal University of Technology, Owerri Nigeria; ²Department of Anatomy, School of Basic Medical Science, Federal University of Technology, Owerri, Nigeria

✉ **Corresponding author:** Solomon Ukibe, soloukibe@yahoo.com

Background: Congenital Clubfoot Syndrome is a common musculoskeletal abnormality in Nigeria. A retrospective 5-year study was conducted to determine the epidemiology and pattern of Congenital Clubfoot Syndrome in Imo State southeast of Nigeria.

Methods: A total of 256 patients treated at three major hospitals in Imo State between 2012 and 2016 were analyzed.

Results: The results showed that 159 (62.1%) were males, while 97 (37.9%) were females giving a male:female ratio of roughly 3:2. Children aged 0-2 months were the most affected, followed by children aged 9-11 years. The Syndrome was bilateral in 158 (61.7%) of cases and unilateral in 98 (38.3%). Clubfoot Syndrome occurred each of the study years, but had the highest frequency 68 (26.6%) in 2015.

Conclusion and Implications for Translation: The study concludes that Clubfoot Syndrome is a major cause of disability in Imo State of Nigeria. Early diagnosis and appropriate correction in orthopedic hospitals will go a long way to reverse the trend.

Keywords: Clubfoot • Epidemiology • Imo State • Nigeria

ABSTRACT 04: THE EPIDEMIOLOGY OF TIBIAL FRACTURES TREATED IN MAJOR HOSPITALS IN IMO STATE, SOUTHEAST NIGERIA

Solomon N. Ukibe MBBS, PhD^{1✉}; **Jervas Ekezie** PhD²; **Chukwubike U. Okeke** PhD¹; **Chisomaga C. Ekeh** MSc²; **Tochukwu N. Ugorji** MSc¹; **Cynthia O. Onyejekwe** B.Tech¹

¹Department of Prosthetics and Orthotics, School of Health Technology, Federal University of Technology, Owerri Imo State Nigeria; ²Department of Anatomy, School of Basic Medical Science, Federal University of Technology, Owerri, Imo State, Nigeria

✉ **Corresponding author:** Solomon Ukibe, soloukibe@yahoo.com

Background: Tibial fractures constitute one of the commonest types of trauma in Imo State, Nigeria. A retrospective epidemiological study was conducted in three major hospitals in Imo State to evaluate the distribution and pattern of tibial fractures treated in Imo State between 2012 and 2016.

Methods: Information was sourced from medical records at Federal Medical Center, Owerri, Christina Specialist Hospital, Owerri and Imo State University Teaching Hospital, Orlu.

Results: Out of a total of 150 cases treated, 79 (52.7%) were males while 71 (47.1%) were females. The most frequently affected group were patients aged 25-34 years (36, 24%) followed by those of 15-24 years (33, 21.3%). The most common cause of tibial fractures was road traffic accidents (RTAs) (52%), followed by falls from a height (44%). A majority (83, 55%) of the cases were open fractures while 53 (35%) were closed fractures.

Conclusion and Implications for Translation: The study concludes that tibial fractures affected more male than female people in their youthful age and was mainly due to RTAs.

Keywords: Tibia • Fractures • Epidemiology • Imo State • Nigeria

ABSTRACT 05: PREVALENCE AND PATTERN OF SOIL TRANSMITTED HELMINTHS (STHs) AMONG PRIMARY SCHOOL CHILDREN AT NNEWI, NNEWI NORTH LOCAL GOVERNMENT AREA, ANAMBRA STATE, NIGERIA

Solomon N. Ukibe, MBBS, PhD¹✉, **Nkeiruka R. Ukibe**, PhD²; **Alphonsus A.C Obi-Okaro**, MBBS, FMCP³; **Miriam O. Iwueze**, PhD⁴

¹Department of Prosthetics and Orthotics, School of Health Technology, Federal University of Technology, Owerri Nigeria; ²Department of Medical Laboratory Science, Faculty of Health Science and Technology, Nnamdi Azikiwe University, Nnewi Campus, Nigeria; ³Department of Community Medicine, Faculty of Medicine, Nnamdi Azikiwe University Teaching Hospital, Nnewi Campus, Nigeria; ⁴Department of Parasitology and Entomology, Faculty of Bioscience, Nnamdi Azikiwe University, Awka, Nigeria.

✉ **Corresponding author:** Solomon Ukibe, soloukibe@yahoo.com

Background: Soil Transmitted Helminths (STHs) are of great Public Health importance. The present study was designed to evaluate the prevalence and pattern of STHs among primary school children at Nnewi North Local Government Area of Anambra State, Nigeria.

Methods: Two hundred and fifty (250) school children aged 1-12 years were randomly recruited from 5 major primary schools at Nnewi between January and June 2017. Ninety-five (38%) were males while 155 (62%) were females. Stool samples were collected using universal sterile containers and examined microscopically using saline floatation method.

Results: Out of the 250 pupils examined, 105 (42%) were positive for at least one STH. Out of the 95 males examined, 40 (42.1%) were positive, while 65 (41.9%) of the 155 females examined were positive, showing no significant difference between sexes ($p > 0.05$). Children aged 1-5 years had the highest prevalence (62.2%), followed by those aged 6-8 years (33.3%), while those of ages 9-12 years had the least prevalence. Prevalence was significantly different between the different age groups ($p < 0.05$). Among the STHs isolated, *Ascaris lumbricoides* was the most prevalent (22%), followed by Hookworm (14%). The least prevalent was *Trichuris trichiura* (6%). No case of mixed infection was detected.

Conclusion and Implications for Translation: The study concludes that STHs are of immense public health importance in primary school children at Nnewi and efforts should be intensified to promote health education, personal hygiene, sanitation and regular deworming of school children.

Keywords: Soil Transmitted Helminths • Children • Nnewi • Niger

ABSTRACT 06: EMIGRATION OF NIGERIAN MEDICAL DOCTORS: NEED FOR POLICY REVIEW

Precious O. Eteike, MBBS, MPH¹✉ and **Evangeline T. Oparaocha**, PhD²

¹Federal Medical Center, Owerri, Imo State, Nigeria; ²School of Health Technology, Federal University of Technology, Owerri, Imo State, Nigeria

✉ **Corresponding author:** Precious Eteike, drpreciouseteike@gmail.com

Background: The overall health indices of Nigeria still rank among the lowest globally. Contributing to this is the poor medical doctor-patient ratio in Nigeria. Emigration of Nigerian doctors en masse for any

reason will certainly worsen these situations. The study assessed the nature and magnitude of emigration of Nigerian doctors, and as well identified some major contributing factors.

Methods: The survey was done in 3 Tertiary Medical Centers in the southeastern part of the country; the Federal Medical Center Owerri (FMCO), Imo State; Federal Medical Center Umuahia (FMCU), Abia State and Nnamdi Azikiwe University Teaching Hospital (NAUTH), Nnewi from January to May, 2018. A total of 669 medical doctors randomly selected from different cadres and specialties were interviewed using semi-structured questionnaires. The data were analyzed with SPSS version 20.0.

Results: As high as 89.7% (600/669) of the respondents indicated interest in emigration and 96.5% (579/600) admitted making plans to emigrate within the next 6 months - 1 year (23.8%, 138/579), 2-5 years (72.5%, 420/579), and > 5 years (3.6%, 21/579). United Kingdom (UK) was on top of the preferred destination countries (69%, 414/600), followed by the United States of America (USA) (13.5%, 81/600), and Saudi Arabia (9.5%, 57/600), while Australia, Canada, Germany and Netherlands (2%, 12/600 each) had the least. The reasons for emigration were: career and professional advancement (77.0%, 462/600), seeking a better pay package (71.5%, 429/600), poor facilities and work environment (45.5%, 273/600), poor safety and security (40.5%, 243/600), and to join family or relatives in the destination country (3.0%, 18/600). Some (55%; 330/600) accepted returning to work in Nigeria with the following top 3 conditions: improved facilities and work environment (94.6%, 312/330), comparable salary and benefits (89.1%, 294/330) and improved safety and security measures (56.4%, 186/330).

Conclusion and Implications for Translation: The medical doctor-patient ratio in Nigeria is likely to worsen in the near future. However, if the government could make and implement policies that would address some of the working conditions, Nigeria may become one of the health tourist countries in the future.

Keywords: Emigration • Nigeria • Medical Doctors

ABSTRACT 07: PATTERN OF EYE DISEASES IN A RURAL COMMUNITY OF ENUGU, NIGERIA

Samuel C. Osuji, O.D, MPH¹✉; Nnaemeka A. Onwukwe, O.D, MPH¹; Roland A. Oboh, O.D, MPH¹; Helen C. Odo, O.D¹

¹Department of Optometry, Madonna University Nigeria, Elele, Rivers State Nigeria.

✉ **Correspondence author:** Samuel Osuji, drsamsuji@yahoo.com

Objective: This study aimed to determine the patterns of eye diseases in the rural community of Enugu-Ezike in Igbo-Eze North Local Government Area, Enugu State, Nigeria.

Methods: In a population-based cross-sectional study carried out in a 4-day Community Eye Health Screening at Enugu-Ezike, participants were sampled using convenient sampling method. Participants' case histories were taken to contain details of demographic characteristics, personal history, presenting complains, aided and unaided visual acuity. Ocular examinations were done using Pentorch, Snellen's Visual Acuity Chart, Direct Ophthalmoscope, Contact Tonometer, Trial Lens Case, Retinoscope, and findings were recorded. The Statistical Package for the Social Sciences (SPSS 16.0.) was used to analyze the data; $p < 0.05$ was taken to be significant.

Results: There were 650 participants screened, out of whom 466 (71.7%) persons presented with eye diseases. Of the 466 persons, there were 174 males (37.3%) and 292 (62.7%) females with a male to female ratio of 1:2. Their ages ranged from 6-90 years with the mean \pm standard deviation age (SD) of 56.79 ± 16.134 years. The older age group of 66 years and above presented with more eye diseases 180 (38.6%), compared with the least age group 6-20 years 25 (5.4%). The results showed that the most common eye disease found was glaucoma, noted among 12 participants and revealing a prevalence rate

of 24.0%, followed by cataract 103 (22.1%) and pterygium 71 (15.2%). And these varied significantly with gender, age, occupation, marital status, level of education, and socioeconomic status ($p=0.00$, 95 CI). However, stye was infrequent and was the least common 6 (1.3%) eye disease in the community.

Conclusion and Implications for Translation: The effort at improving the ocular health of this community can be focused on reducing the burden of glaucoma, cataract, pterygium and related eye diseases.

Keywords: Pattern • Eye Diseases • Rural Community • Enugu-Ezike • Nigeria

ABSTRACT 08: ASSESSMENT OF VISUAL HEALTH AMONG TRICYCLE OPERATORS IN OWERRI MUNICIPAL, NIGERIA, AS A PREVENTIVE STRATEGY TO ROAD TRAFFIC ACCIDENTS

Chikaodi C. Amadi, MPH✉

Department of Public Health, Federal University of Technology, Owerri, Imo State, Nigeria.

✉ **Correspondence author:** chikacrescentia@gmail.com

Background: Assessment of visual health among tricycle operators in Owerri municipal as a preventive strategy to road traffic accidents (RTA) was investigated in this cross sectional study. Factors affecting the visual acuity were also investigated.

Methods: A total of 302 tricycle operators aged 20-69 years who had been driving for one year and above participated in the study. Their demographic, occupational and social histories were recorded based on informed consent. Their visual acuities and ocular pathologies detected were also recorded. Data collected were analyzed using computer software SPSS version 22.

Results: Results obtained showed that the majority of participants (97.5%) had normal vision for driving, while 4.3% had impaired visual acuity. The recorded rate of accident occurrence was high among the respondents with impaired visual acuity and ocular morbidity at a relative risk of 3.02 and 4.88 respectively. Factors affecting the visual acuity of the respondents were found to be age, ophthalmic diseases and systemic diseases.

Conclusion and Implications for Translation: Although majority had normal vision, RTAs were found to be high among those with impaired visual acuity. Health education and visual function test are needed for the promotion of road safety.

Keywords: Tricycle Operators • Visual Acuity • Accident • Owerri Municipal • Nigeria

Section B: Local Fabrications for Health Promotion

ABSTRACT 09: DESIGN AND FABRICATION OF ALCOHOL BREATHE ANALYZER WITH LOCALLY SOURCED MATERIALS

Gideon I. Ndubuka, BMLS, PhD¹✉; **Francis C. Akabuogu, B.Sc**¹; **Wilson C. Okafor, M.Sc**¹; **Jervas Ekezie, PhD**²

¹Departments of Biomedical Technology, Federal University of Technology, Owerri, Imo State, Nigeria; ²Department of Anatomy, Federal University of Technology, Owerri, Imo State, Nigeria

✉ **Correspondence author:** Gideon Ndubuka, chinmagideon@yahoo.com

Background: Alcohol has been classed a drug of high efficiency of intoxication and, in many countries in the world, is a restricted beverage for certain age groups and in other age groups is prohibited at work. The principle behind screening for alcohol overdose has been established as an important step in identifying risky drinkers. The design and fabrication of alcohol breathe analyzer will help identify individuals with high or low consumption volume that have slow or high intoxication susceptibility.

Methods: The design and fabrication of the a alcohol breathe analyzer was done with locally sourced materials and in consideration of methods of brewing, consumption and relevant laws in Nigeria. The alcohol breath analyzer was designed using Computer Aided Design (CAD) software and locally sourced materials were programmed in the integrated circuit design thereby having accurate miniaturized fabrication. The device was designed to display a ranged output for each single use, where a small and large value represented the lower and higher limit of Blood Alcohol Concentration measured respectively. As programmed, the function cumulates to intelligent system with input interpretation of colour development within and translated at the output semi-station. A feedback unit station serves in ranges for error and limits operation when there is detrimental occurrence.

Results: Test-run results of the device showed that output maintained some level of correlation with expected ranged output.

Conclusion and Implications for Translation: There was increased reliability observed with this alcohol breath analyzer equipment when results were presented in ranges. Further study on this equipment is required.

Keywords: Alcohol Intoxication • Consumption • Breathe Analysis • Locally Sourced • Reliable Result

ABSTRACT 10: LOCALLY-FABRICATED SHORT MESSAGING SERVICE (SMS)-BASED TELE-CARE PATIENT MONITOR

Chigozie A. Nnadike, B.Tech¹ and Samuel C. Iwuji, Ph.D¹✉

¹Department of Biomedical Technology, School of Health Technology, Federal University of Technology Owerri, P.M.B 1526 Owerri, Imo State, Nigeria

✉ **Correspondence author:** Samuel Iwuji, samuel.iwuji@futo.edu.ng

Objective: The aim of this study was to develop and implement a mobile monitoring system which utilizes short messaging service (SMS), along with hardware and software equipment based on a proof of concept prototype, to transmit blood pressure and body temperature readings of a patient to the care-giver or physician in a remote location.

Methods: The communication between the device and the patient is implemented using measuring equipment (digital sphygmomanometer and LM35 temperature sensor). The readings or data are analyzed and compared to detect abnormalities; this is done by the microcontroller (PIC16F877A). The microcontroller sends the information to the LCD for display and also to the GSM modem via MAX232. The information is then forwarded to the physician's phone by the GSM modem. In case of panic, the device automatically initiates an alerting SMS to the patient's care-giver or doctor. It also enables exchange SMS between the patient and the physician, making continuous monitoring possible.

Conclusion and Implications for Translation: This experimental health monitoring set-up can be operated from anywhere in the globe with any cellular network that offers data services. It was designed for intensive health care where critical monitoring is needed at all times. The system is relatively portable, versatile, cost effective, and user friendly.

Keywords: Locally Fabricated • SMS-Based • Tele-Care • Patient Monitor

Section C: Ethnobotanicals in Disease Prevention and Wellness Promotion

ABSTRACT 11: CHARACTERIZATION OF AQUEOUS EXTRACT OF *BRASSICA OLERACEA VAR CAPITATA* AND EVALUATION OF ITS ANTIOXIDANT POTENTIAL

Alma T. Banigo, Msc¹; Samuel C. Iwuji, Ph.D¹; Ezinne Ibe, B.Tech¹

¹Department of Biomedical Technology, Federal University of Technology, Owerri, Imo State, Nigeria.

✉ **Corresponding author:** Alma Banigo, alma.banigo@futo.edu.ng

Background: The purpose of this study was to characterize and examine the beneficial phytochemicals in *Brassica Oleracea Var Capitata* (green cabbage) that activate and stabilize antioxidants and detoxification mechanisms in humans.

Methods: Aqueous extracts of *B. oleracea* were analyzed for phenolic compounds and antioxidant activity (AA) using gas chromatography-mass spectrophotometry (GC-MS) and different *in vitro* assays, respectively. The AA was tested by radical scavenging activity of cabbage extract against 1, 1-diphenyl-2-picrylhydrazyl (DPPH) and nitric oxide (NO) assays.

Results: Ten phenolic compounds including 9,12,15-octadecatrienoic acid; 2,3-dihydroxypropyl ester; 9, 12-octadecatrienoic acid; dimethyltrisulphide; N,N-Bis (3-aminopropyl) trimethylenediamine and 2,5-dimethoxy-4-ethylamphetamine were identified. The extract also generated positive indications of the presence of vitamin K and ascorbic acid and was highly active in the scavenging of free radicals using DPPH and NO assays.

Conclusion and Implications for Translation: The high antioxidant activity of the green cabbage extract was comparable to standard results. *Brassica Oleracea Var Capitata* possess a high potential for use as a bioactive solution and food supplement against the diseases caused by oxidative stress.

Keywords: Aqueous Extract • Antioxidant Potential • *Brassica Oleracea Var Capitata*

ABSTRACT 12: BIOCHEMICAL EFFECTS OF *PIPER GUINEENSE* IN FEMALE DIABETIC WISTAR RATS

Gordon Amadi, B.Sc¹; Samuel C. Iwuji, Ph.D²; Taofik O. Azeez, Ph.D²; Chioma O. Wodu B.Sc³

¹Department of Biomedical Engineering Technology, Rivers State College of Health Science and Technology, Rumueme, Port Harcourt, Rivers State, Nigeria; ²Department of Biomedical Technology, School of Health Technology, Federal University of Technology Owerri, Imo State, Nigeria; ³Department of Biomedical Technology, School of Science Laboratory Technology, University of Port Harcourt, Rivers State, Nigeria.

✉ **Corresponding author:** Samuel Iwuji, samuel.iwuji@futo.edu.ng

Objectives: The study investigated the biochemical effects of oral doses of *Piper guineense* (uziza) on female albino Wistar rats.

Methods: The animals were divided into six groups (n=7). Group 1 received water and feed only. Groups 2 – 6 were induced with diabetes using alloxan. Methanolic leaf extract of *P. guineense* was administered to Groups 2 to 4 in 40mg/kg, 80mg/kg and 100mg/kg body weights representing low, medium and high doses respectively, Group 5 was treated with 10mg/kg body weight of glibenclamide (antidiabetic drug), and Group 6 was left untreated. All treatments were carried out orally and lasted for a period of 14 days at the end of which the animals were sacrificed through cardiac puncture and blood samples were collected for analysis of their biochemical parameters using assay kits.

Results: The results showed that the oral doses of methanolic leaf extract of *Piper guineense* had no negative alterations on the biochemical parameters analyzed (lipid profile such as triglyceride, low density lipoprotein, total cholesterol and high density lipoprotein levels and on electrolytes, such as sodium, potassium, chloride, bicarbonate, urea and creatinine levels). Furthermore, there was a significant reduction in the urea levels of

treated animals and marked, though, insignificant reduction of the total cholesterol level and increase in high density lipoprotein at $P < 0.05$.

Conclusion and Implications for Translation: *P. guineense* caused no adverse biochemical changes in female diabetic rats and could be useful in the management of diabetes among diabetic or prediabetic females.

Keywords: Diabetes • *Piper Guineense* • Lipids • Electrolytes

ABSTRACT 13: COMPARATIVE ANALYSIS OF THE ANTIBACTERIAL EFFECTS OF EMILIA SONCHIFOLIA (TASSEL FLOWER) AND SELECTED ANTIBIOTICS ON OCULAR BACTERIA, IN VITRO

Genevieve I. Ugwoke, OD^{1✉}; Nwakaego C. Ikoro, O.D, Ph.D¹; Emmanuel C. Esenwah, O.D, Ph.D¹; Young C. Azuamah, OD, M.Sc¹

Department of Optometry, Federal University of Technology, Owerri, Imo State, Nigeria.

✉ **Corresponding author:** Genevieve Ugwoke, genevieveugwoke@yahoo.com

Background: Development of bacterial resistance to available antibiotics has necessitated the screening of medicinal plants for bioactive compounds; this screening is increasing in popularity. *Emilia sonchifolia* [*E. sonchifolia*] (tassel flower) is a multipurpose plant that has exhibited antimicrobial effects against a wide range of microorganisms. The antibacterial activity of *E. sonchifolia* (tassel flower) extracts were compared with selected antibiotics against three bacteria: *Staphylococcus aureus*, *Pseudomonas aeruginosa* and *Neisseria gonorrhoeae* in vitro, using the Kirby-Bauer disc diffusion method.

Methods: Bacteria used were isolated from the eyes of some infected patients that visited the Federal University of Technology, Optometry Teaching Clinic and St Joseph's Eye Hospital Mgbirichi all in Owerri, Imo State, Nigeria between May 2015 and October 2015. They were identified and characterized microscopically using standard laboratory methods. Diameters of zones of inhibition were measured for the different extracts of tassel flower and selected antibiotics, which served as controls. The data collected were tabulated and analyzed using student's T-test and ANOVA at a 95% confidence interval and at a 0.05 level of significance.

Results: Phytochemical screening of the plant in ethanol, methanol and aqueous solvents showed the presence of saponin, tannin, flavonoid, phenol, alkaloid, steroid and glycoside in all the extracts, with the exception of flavonoid which was not present in the aqueous extract. Results showed that ethanol, aqueous, and methanol extracts exhibited antibacterial activity against the isolates with mean inhibition zone diameters of 13.33 ± 2.89 , 9.33 ± 1.16 and 7.67 ± 2.52 , respectively, their effects on the isolates were significant with $p(0.01) < 0.05$, while those of the antibiotics were 12.00 ± 3.46 for gentamicin, 17.00 ± 10.58 for ofloxacin and 5.00 ± 0.00 for erythromycin. A comparison of the effects of *E. sonchifolia* and antibiotics on the bacterial isolates using one-way ANOVA showed the effect of *E. sonchifolia* does not differ significantly from the antibiotics as $p(0.58) > 0.05$.

Conclusion and Implications for Translation: This study showed that *Emilia sonchifolia* could become a promising natural antibacterial agent with potential application in pharmaceutical industries for the production of plant-based ocular drugs.

Keywords: Emilia Sonchifolia • Antibiotics • Ocular Bacteria