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ABSTRACT – A001

Title: Effects of Methanol Extract of Glycine Max on Hippocampus of Butyl-Scopolamine Induced Memory Impairment in Adult Male Wistar Rats

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Background: Neurodegenerative diseases are significantly indicated by memory impairment which is majorly targeted at the Hippocampus. Studies have reported that excess Butyl-scopolamine (BS), an anti-muscarinic drug is capable of altering the structures and functions of memory-associated areas of the brain. As a result, therapeutic interventions that would bypass systemic adverse effects on the nervous system is to be explored. Glycine Max (GM), a legume with natural antioxidants and anti-inflammatory compounds is widely known for combating many diseased conditions. This study assessed the effects of Methanol extract of Glycine max (GM) on Hippocampus of Butyl-Scopolamine (BS) induced Hippocampal damage and memory impairment in Adult Male Wistar rats.

Methods: Twenty-five Male Wistar rats weighing 170g-220g were randomized with weight into five groups (n=5) of a control group and four experimental groups (A toxic butyl-scopolamine group (BS) and three (3) treatment groups (low dose(L), moderate dose(M) and high dose(H) of Glycine Max(GM)). The Experimental rats were first induced intra-peritoneally with 1000mg/kg b.w of butyl-scopolamine (BS) and subjected to Pre-treatment behavioral test (T-maze) after the third day of induction to ascertain memory impairment. Control group was given water, toxic BS group received 1ml/kg b.w of normal saline, treatment groups; BS + L-GM), BS + Moderate dose glycine max (M-GM) and BS + High-dose glycine max groups (H-GM) received 500mg/kg, 1000mg/kg and 1500mg/kg b.w methanol extract of GM orally for ten (10) days. At the end of the experiment, the rats were subjected to Post-treatment T-maze test to examine recovery from hippocampal damage. Thereafter, brain samples of the rats were obtained through cervical dislocation; the bilateral hippocampi were sagittally sectioned (4µm) and stained with cresyl violet to examine histomorphological changes. ImageJ software was used for histomorphometry and one-way Anova for statistics.

Results: Behavioral results showed a lesser time-taken to explore arm of maze in control (20.40±3.82) and L-GM (25.37±1.88) groups compared to longer time-taken in BS (44.28±1.08), H-GM (38.20±9.16) and M-GM (35.12±8.15) groups which suggested better cognitive functions (P<0.001). The cresyl violet Photomicrographs of Glycine max rats showed abundant pyramidal neuronal cells of hippocampus with the highest in L-GM group (L-GM 58±3.90) compared to the BS group with low and pyknotic neuronal cells (20.00±4.54) with significance of P<0.001. Decreased surface area of the perikaryon was observed in L-GM (34.86±7.90) compared to BS group with (81.24±9.60) which suggested suppression of neuro-inflammation. Photomicrographs of L-GM showed many synapses as well as dense Nissl granules surrounding the perikaryon compared to BS with less or no synapse and very less dense Nissl.

Conclusion: The behavioral, histomorphology and histomorphometry results in this study indicated that GM ameliorate memory impairment by reducing inflammation of pyramidal neuronal cells, increasing number of neuronal cells and improving cognition or memory. Although, the overall effects of GM were more pronounced in the L-GM group which suggests that amelioration of memory impairment is possible with low dose of GM overtime.

Keywords: Glycine Max, Hippocampus, Memory Impairment, Neurodegeneration Histoarchitecture, Amelioration.

ABSTRACT – A002

Title: Knowledge on Perceived Causes and Preventive Practices Adopted for Prostate Cancer among Commercial Motorcyclists in Obafemi Awolowo University, Ile-Ife

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Background: Prostate cancer represents a significant health issue for men, particularly those over 40 years of age. Preventive practices are poorly adopted in developing countries due to limited knowledge, cost, and time constraints, leading to late diagnosis and complications. Many studies have associated prostate problems with prolonged whole-body vibration, especially at high frequencies, which is a common occupational hazard experienced by commercial motorcyclists. Knowledge on the causes and preventive behaviours adopted for prostate cancer among the motorcycle riders can inform targeted health interventions to mitigate the impact of these hazards and control the attendant prostate problems in Nigeria.

Objective: This study investigates the knowledge on the perceived causes of prostate cancer, the preventive practices adopted for prostate cancer, and the measures for improving prevention practices identified by the motorcyclists at Obafemi Awolowo University.

Methods: A descriptive design and a quantitative method were employed for data collection. The study sample was obtained using Cochran's formula. A questionnaire was administered of 386 respondents who were systematically selected after obtaining their informed consent to participate in the study and assuring their confidentiality and anonymity. Data analysis was conducted using the Statistical Package for Social Sciences (SPSS) version 25, with descriptive and inferential statistics.

Results: Findings showed that the respondents' modal age range was 39-48 years (44.3%), majorly practicing Christianity religion (59.3%), were married (64.0%) and had up to secondary (32.4%) and tertiary (32.3%) educational levels, respectively. Just about one-third (35.5%) demonstrated a good knowledge of causes of prostate cancer, while the majority (96.4%) demonstrated a poor practice of prostate cancer prevention. However, the vast majority supported the need for various initiatives aimed at promoting awareness, prevention and support services for prostate cancer prevention and screening. A significant association was found between respondents' knowledge of prostate cancer and their religion ($p = 0.001$) and level of education ($p = 0.001$). A regression analysis revealed a significant prediction of the respondents' level of knowledge influencing their prevention practices.

Conclusion: The motorcyclists possess a poor knowledge level on causes of prostate cancer and poor prevention practice levels. This indicates a need for targeted educational initiatives to increase awareness and promote proactive preventive health behaviours against prostate cancer among the respondents.

Keywords: Prostate Cancer, Knowledge, Preventive Practices, Motorcyclists, Health Education, Nigeria.

ABSTRACT – A003

Title: Burden of Care, Occupational Engagement and Quality of Life of Caregivers of Patients with Selected Neurological Disorders in Obafemi Awolowo University Teaching Hospital Complex, Ile-Ife

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Background: Neurological disorders significantly impact individuals' independence, often necessitating caregiver assistance for daily activities. Caregiving for such individuals is demanding and can adversely affect caregivers' occupational engagement and overall quality of life.

Objectives: This study aimed to assess the burden of care, occupational engagement, and quality of life among caregivers of patients with neurological disorders to understand the relationships between these factors.

Methodology: A cross-sectional study involving 130 caregivers of neurological disorder patients was conducted at Obafemi Awolowo Teaching Hospital Complex, Ile-Ife, Nigeria. Data were collected using the Zarit Burden Interview, Occupational Gap Questionnaire-Uganda version (OCG-U), and WHO-QOL BREF. Descriptive statistics (frequency, mean, percentage) and inferential analyses (chi-square test of association) were used for data analysis.

Results: The caregivers' mean age was 39.28 ± 13.06 years, with more males (50.8%) than females (49.2%). Most caregivers experienced mild to moderate burden (49.2%) and reported significant occupational gaps in heavy-duty tasks (33.1%). Quality of life was highest in the physical health domain (mean: 22.53 ± 3.14) and lowest in psychological relationships (mean: 20.58 ± 3.02). Significant associations were observed between marital status and social/family life ($p=0.022$), income and emotional well-being ($p=0.009$), and caregiving duration with Instrumental Activities of Daily Living (IADL) participation ($p=0.035$). Caregiving burden positively influenced the social relationship domain of quality of life ($r=0.20$, $p=0.021$).

Conclusion: Caregivers reported mild to moderate burdens, high occupational participation, and good overall quality of life. However, significant associations highlight the need to address demographic and caregiving factors to improve caregivers' well-being.

Keywords: caregiver burden, occupational engagement, Quality of life, neurological disorders

ABSTRACT – A004

Title: Relationships among Socioeconomic Status, Perceived Family and Social Support; and Depression among Mothers of Children Living with Disability in Ile-Ife

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Background: Mothers of children with disabilities (CwD) often experience higher levels of stress, anxiety, and depression than mothers of typically developing children. This can negatively affect their well-being and their children's development. Understanding the factors that influence the mental health and well-being of these mothers is crucial to helping them cope and increase resilience. This study investigated the relationship between socioeconomic status, perceived family support, perceived social support, and depression among mothers of children with disabilities.

Methods: This cross-sectional study involved 75 purposively selected mothers of CwD in Ile-Ife, Nigeria. Ethical approval was obtained from the Health Research and Ethics Committee of the Institute of Public Health, Obafemi Awolowo University (IPH/OAU/12/2428). Administrative approval was obtained from the heads of schools to contact mothers of children with disabilities via consent letters sent via the children. Data were collected using four questionnaires, namely Kuppaswamy's Questionnaire for socioeconomic status (SES), the Family Support Scale (FSS) for perceived family support, the Multidimensional Scale of Perceived Social Support (MSPSS) for perceived social support, and the Patient Health Questionnaire (PHQ-9) for depression levels. Data were analysed using descriptive statistics, including frequency, percentage, mean, and standard deviation. Pearson's correlation was used to examine relationships between SES, family and social support, and depression. The alpha level was set at $P < 0.05$.

Results: Results showed that most respondents (41.3%) were classified as lower-middle class, with (38.7%) in the upper-lower class. A substantial proportion (49%) had average family support, while (60%) reported moderate perceived social support. The majority (78.6%) experienced mild to moderately severe depression. While no significant correlations were found between socioeconomic status ($r = -0.008$, $p = 0.946$), family support ($r = 0.080$, $p = 0.493$), or social support ($r = 0.096$, $p = 0.413$) and depression, other factors such as caregiving burdens, societal stigma, limited access to mental health resources, and chronic stress may have contributed to the reported levels of depression. **Conclusion:** The findings suggest that mothers of CwD had low socioeconomic status, average family support, and moderate social support, yet experienced mild to moderate depression. It is recommended that intervention programs be developed to support these mothers. Family and social support groups should be established to improve the psychosocial well-being of affected families. Moreover, educational campaigns should raise awareness about the impact of socioeconomic factors on mental health.

Keywords: Socioeconomic status, Perceived family support, Depression, Mothers, Mental Health, Disability.

ABSTRACT – A005

Title: **Histological, Histochemical and Immunohistochemical Assessments of Ethanol Extract of *Senecio biafrae* (Asteraceae) Leaves on the Liver of Adult Wistar Rats Following Mercury Chloride – Induced Hepatotoxicity**

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Background: This study assessed the effects of ethanol extract of *Senecio biafrae* leaves (EESBL) on the histoarchitecture and histomorphometry and structure of rats' liver cells cytoskeleton of liver adult Wistar rats following mercury chloride – induced hepatotoxicity.

Methods: Forty-two adult Wistar rats were assigned into seven groups of six rats each (n=6). Rats in group 1 (normal control) were administered with 2 mL/kg distilled water for 42 days, while groups 2 – 7 rats were given 4 mg/kg of mercury chloride, orally, for 21 days. Twenty-four hours after the last administration of mercury chloride, group 2 (negative control) were sacrificed immediately, group 3 (recovery group) were observed for the next 21 days, group 4 (positive control) were given 2 mg/kg b. w. of Silymarin, 12 hourly, orally for 21 days while, group 4, 5, and 6 were respectively given 300, 400 and 600 mg/kg of EESBL, orally for 21 days. The rats were sacrificed, tissues sections were stained with hematoxylin and eosin, Gridley's silver impregnation, periodic acid – Schiff with diastase control and Feulgen reaction for demonstration of general histoarchitecture, reticulin fibers, glycogen deposition and deoxyribonucleic acid and pan – cytokeratin antibody respectively. Data collected were analysed using One – way ANOVA, followed by Tukey's post hoc test for multiple comparisons.

Results: Results were expressed as mean \pm standard error of mean, with level of significance set at $p < 0.05$. The results showed that mercury chloride caused a marked damage in the histoarchitecture of the liver, showed by varying degree of hepatocellular necrosis, vacuolation of hepatocytes, congestion of the central vein, and sinusoidal dilatation, reticulin fibers degeneration, glycogen depletion, altered levels of liver enzymes and oxidative stress biomarkers when compared to the control. However, the administration of EESBL reversed most of the changes in groups 6 and 7 in a dose dependent manner when compared to the negative control. HgCl₂ administration revealed a remarked decrease in the number of hepatocytes count when compared to the control, EESBL, and silymarin groups. HgCl₂ group revealed reduced immunohistochemical stains reactivity, when compared to the control, with a significant decrease in quantified liver pan- cytokeratin immuno-stain intensity when compared to the silymarin-treated group. EESBL administration revealed normal staining intensity comparable to the control. EESBL administration revealed normal staining intensity comparable to the control. Mercury Chloride significantly decrease body weight rats causing metabolic disruptions and reduce nutrient absorption. However, treatment with EESBL and silymarin influenced the recovery of body weight of rats in dose dependent manner.

Conclusion: It was concluded that the potential of EESBL in possessing the ability to protect and ameliorate hepatic damage, was due to the antioxidant properties of its flavonoid concentration.

Keywords: Mercury Chloride, *Senecio biafrae* Leaves, Oxidative Stress, Hepatotoxicity, Silymarin, Pan – Cytokeratin, Histological Parameters

ABSTRACT – A006

Title: Evaluation of Atherogenic Indices among Women with Breast Cancer in Ile-Ife, Nigeria

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Background: Cardiovascular disease is the most common cause of death globally and its risk among women with breast cancer (BC) is not fully assessed. This study evaluates the cardiovascular risk of women with breast cancer using atherogenic indices and compare with controls.

Methods: Ninety (90) women were recruited for this cross-sectional study from the breast imaging unit of Obafemi Awolowo University Teaching Hospital, Ile-Ife (OAUTHC). Those with confirmatory histology reports were stratified into BC while normal breast reports served as controls. Anthropometric measurements were taken followed by 5 mL blood collection for lipid

profile (TC, TG, LDL-c, and HDL-c) assay on Cobas c311. Castelli Risk Index I and II (CRI-I and II), atherogenic index of plasma (AIP), atherogenic coefficient (AC), Cholindex (CI), and non-HDL-c (NHC) were calculated to assess and stratify participants into cardiovascular risk groups. Data was analysed by SPSS 22 using a student t-test and presented as mean \pm 2S.D. $P < 0.05$ was considered significant.

Results: Women with BC were younger (51.6 ± 10.3 vs 59.0 ± 12.7 years), had significantly lower waist circumference (90.5 ± 11.3 vs 96.3 ± 14.9 cm) which positively correlated with TG. The mean serum TG and HDL-c (1.11 ± 0.4 vs 1.36 ± 0.5 mmol/L and 1.09 ± 0.4 vs 1.48 ± 0.3 mmol/L) were significantly lower in BC than the controls ($P < 0.05$). However, CRI-1, CRI-2, and AC were significantly higher in BC than the controls (4.83 ± 2.0 vs 3.69 ± 0.9 ; 3.29 ± 1.8 vs 2.24 ± 0.8 ; and 3.83 ± 2.0 vs 2.68 ± 0.9) respectively. $P < 0.05$. These atherogenic indices showed that BC group had a higher proportion (80.4%, 38.3%, and 59.6%) of women at high risk of CVD than controls (69.8%, 9.3%, and 27.9%) respectively. However, only NHC stratified the controls to be more at risk of CVD (60.5% vs 57.4%). Positive correlations were found among the anthropometry, lipids, and atherogenic indices. However, only TG had a significant positive correlation with all the measured indices. $P < 0.05$.

Conclusion: Women with BC have a high risk of cardiovascular disease. Estimating the atherogenic indices of women with BC has the potential to improve their overall well-being and possible treatment outcomes.

Keywords: Breast cancer, cardiovascular risk, atherogenic indices

ABSTRACT – A007

Title: Progressive Evaluation of the Ethanol Extract of *Euphorbia Kamerunica* (Pax) Leaves and its Fractions on Hippocampal Morphology of Temporal Lobe Epilepsy in Wistar Rats

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Background: Temporal lobe epilepsy is a neurological condition characterized by repeated, unprovoked focal seizures. Epileptogenesis describes the progressive process resulting in complex plastic changes in the brain due to underlying mechanisms of neuroinflammation and oxidative stress. Ethanol extract of *Euphorbia kamerunica* (EEUK) (Pax) has been found to contain varied constituents of anti-oxidants and diterpenes properties which are therapeutically relevant for their biological activities. The study assessed the neurobehavioral changes in memory, examined the progressive histomorphological changes of neurons in different hippocampal regions, and evaluated the histological state of dendritic spines across all groups in different phases (acute, latent and chronic of epileptogenesis).

Methods: One hundred and twenty adult male Wistar rats, aged 10-12 weeks and weighing 150-180g, were randomized by weight and used for this study. The experimental design involved three phases of epilepsy (Acute, Latent, and Chronic), each subdivided into eight groups (A-H) with five rats per group. Group A served as the control, administered 2mL/kg of normal saline intraperitoneally (i.p.), while Group B was the sham control, administered 2mL/kg of olive oil orally. Epilepsy (EPY) was induced in Groups C-H using 30 mg/kg of pilocarpine (i.p.) before a 24-hour preceding dose of 127 mg/kg lithium chloride (i.p.). Seizures were terminated with 10 mg/kg diazepam intramuscularly (i.m.) after 60 minutes. Group C remained untreated post-seizure, while Groups D-G were treated with 100 mg/kg of EEUK and its fractions (N-Hexane, DCM, Ethyl acetate and Ethanol) and Group H received 10 mg/kg sodium valproate orally. Treatments corresponded with each epileptic phase: Acute (3 days), Latent (14 days), and Chronic (28 days). Neurobehavioral assessments (open field and radial arm maze) were conducted. Afterwards, rats were sacrificed, and their brains were harvested for histology, immunohistochemistry, histomorphometry, and biochemical assays. Data collected were analyzed using One-way ANOVA followed by Tukey's post hoc test for multiple comparisons and alpha set at $p < 0.05$.

Results: Neuron-specific nuclear protein (NeuN) staining intensity increased significantly ($F=226.6$; $p=0.001$) in treated groups of the chronic phase. In the acute phase, subcortical white matter thickness increased significantly ($F=21.25$; $p=0.0001$) in control when compared to EPY-only and decreased in treatment (EPY+Ethyl, EPY+SDV, EPY+Ethanol) groups. Neurodegenerative features were observed in hippocampal subfields (CA1, CA3 and DG), with more degenerating neurons in the acute phase compared to latent and chronic phases. Significant increase ($F=14.23$; $p=0.001$) in degenerating neurons were found in the acute phase (24.0 ± 1.07 to 29.0 ± 1.58) when compared to latent (14.1 ± 1.93 to 17.6 ± 0.75) and chronic phases (7.5 ± 0.85 to 13.4 ± 1.21).

Conclusion: The study concluded that across the three phases, ethyl acetate fraction of EEUK had the most significant ameliorative effect on the histomorphology of the hippocampus following the lithium chloride pilocarpine-induced epilepsy in rat model

Keywords: Epileptogenesis, Hippocampus, Temporal lobe epilepsy, Neurodegeneration, *Euphorbia kamerunica*.

ABSTRACT – A008

Title: Interleukins-1, -6, and -18 as Markers of Chronic Kidney Damage in Antiretroviral-naïve and Antiretroviral-treated Patients with HIV/AIDS

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Background: Interleukins-1, -6, and -18 have been reported as biomarkers of kidney injury.

Objectives: We evaluated the relationships between these 3 cytokines and estimated glomerular filtration rate (eGFR) in Antiretroviral-naïve and -treated HIV/AIDS patients.

Methods: Interleukins-1, -6, and -18 were assayed using HPLC. Creatinine with IDMS-traceable Jaffe-kinetic method. Creatinine values were used to determine eGFR (CKD-EPIcr equation-2009)

Results: One hundred and eighty-one subjects (86 ART-naïve and 95 ART-treated) were evaluated. eGFR: 85 (47%): 39 (21.5%) naïve and 46 (25.4%) treated had stage 1 CKD (eGFR: ≥ 90 ml/min/1.73m²); 65 (35.9%): 30 (16.6%) ART-naïve and 35 (19.3%) treated had stage 2 (60-89); 29 (16%): 15(8.3%) naïve and 14 (7.7%) treated had stage 3 (30-59); only 2 (1.1%), both naïve, had stage 4 (15 - 29); none had stage 5 CKD (<15).

No significant difference in eGFR between the naïve and treated, $p=0.81$. The overall mean IL-1, IL-6 and IL-18 was 0.36 ± 0.08 , 0.68 ± 0.05 , and 1.06 ± 0.14 pg/ml respectively. The mean IL-1, IL-6, and IL-18 were significantly higher in the naïve than the treated subjects (0.37 ± 0.07 versus 0.33 ± 0.08 , $p=0.006$; 0.69 ± 0.05 versus 0.66 ± 0.04 , $p=0.005$; 1.09 ± 0.13 versus 1.03 ± 0.14 , $p=0.005$ respectively)

The mean interleukin levels in stage 4 CKD were higher than in stages 1, 2, and 3 CKD. There was no significant correlation between eGFR and any of the interleukins

Conclusion: HIV infection induces cytokine while HAART suppresses cytokine levels, Serum interleukins-1, -6, and -18 are higher in moderate-to-severe HIV-induced renal dysfunction (> stage 3 CKD) than in the mild-to-moderate stages (stage 1-3 CKD).

Keywords: Chronic kidney damage, HIV/AIDS, Interleukin-1, -6, and -18

ABSTRACT – A009

Title: Development and Feasibility Testing of a Home-Based Exercise Therapy Video Tool on Neck Control among Children with Cerebral Palsy.

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Background: Cerebral palsy (CP) is a childhood motor disorder resulting from non-progressive disturbances in the developing brain, affecting movement and posture. Children with CP often experience poor neck control, hindering developmental milestones. Physiotherapy, when intensive and sustained, can induce neuroplastic changes but caregivers face challenges like cost and logistical barriers. Home-based exercise programmes provide supplementary rehabilitative care, though caregiver barriers such as lack of motivation, fear of injuring the child, poor understanding of exercise result in non-adherence. Video-based

educational tools have been shown to improve adherence, but there is a dearth of empirical evidence on their effectiveness in resource-limited settings like Nigeria.

Purpose: This study addressed this gap by developing and testing a home-based exercise therapy video tool focused on improving neck control in children with CP.

Methods: This two-phased quasi-experimental study involved 24 purposively selected participants (12 children with CP and their 12 caregivers). In the development phase, five exercises were adopted from the "Disabled Village Children" text and the video script was made in English and Yoruba languages. The feasibility testing phase involved 12 children with CP aged 6 to 48 months and their 12 caregivers at two randomly selected hospitals in Osun State. Caregivers received the video via their Android phones and were instructed to do the exercises at home at least 5 days a week for 6 weeks. The children's neck control was assessed at baseline, third week and sixth week using Clinical rating scale for head control and Gross motor function measure. The feasibility was also assessed using Feasibility questionnaire. Data were analysed using descriptive statistics of mean, standard deviation, frequency and percentages, and repeated-measure ANOVA. Alpha value was set at $p < 0.05$.

Results: Using the Clinical Rating Scale for Head Control, significant improvements were observed in neck control across various positions. In prone, scores increased from baseline (1.83 ± 0.83) to six weeks (2.42 ± 0.90) ($F=5.32$, $p=0.032$). In supine, scores improved from (1.17 ± 0.83) to (1.75 ± 0.97) ($F=11.537$, $p=0.000$). In supported sitting, scores improved from (1.50 ± 1.24) to (2.42 ± 1.16) ($F=21.421$; $p=0.000$). Using GMFM-88, significant progress was seen in supine (lifts head 45°) with scores rising from baseline (1.00 ± 0.95) to six weeks (1.67 ± 0.89) ($F=7.15$, $p=0.004$). In prone (lifts head upright), scores increased from (1.58 ± 0.67) to (2.25 ± 0.87) ($F=12.571$, $p=0.005$), and in supine (pull to sitting), scores improved from (1.25 ± 0.97) to (1.75 ± 1.06) ($F=7.000$, $p=0.004$). In supported sitting, scores improved from baseline (1.17 ± 0.94) to six weeks (2.33 ± 0.98) ($F=18.192$, $p=0.001$). Caregivers found the video content clear, relevant, and engaging, as indicated by the feasibility questionnaire, supporting its potential as a useful tool for improving neck control in clinical settings.

Conclusions: There was significant improvement in neck control of children with CP after six weeks of home-based exercise therapy video intervention. Caregivers also reported good usability of the video.

Keywords: Cerebral palsy, Home-programmes, Home-based exercises, Instructional videos, Neck control, -Video-based intervention.

ABSTRACT – A010

Title: Diabetes and Exocrine Pancreas: An Ultrastructural Study of the Effect of *Xylopiya aethiopic*

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Background: Diabetes of the exocrine pancreas is a form of diabetes that occurs due to the loss of trophic effect of insulin on the acinar cells of the exocrine pancreas and it has also been hypothesized to be the consequence of a disease of the whole pancreas. Pancreatic exocrine function can be altered both in patients with type I and Type II diabetes and this dysfunction occurs in up to 80% of individuals but its clinical course is different to type I diabetes mellitus or type II diabetes mellitus. This study investigates the histopathological and ultrastructural effects of *Xylopiya aethiopic* on the exocrine pancreas in streptozotocin– induced diabetes in adult male Wistar rats. This will further elucidate on the mode of action of this hypoglycemic herbal therapy.

Methods: Thirty male wistar rats were randomly divided into three groups ($n=10$). Group A served as the normal control, group B was the diabetic control, group C was the *Xylopiya aethiopic* treated group. Group A received a volume of 0.1M sodium citrate buffer (PH 6.3), group B and C received an intraperitoneal injection of streptozotocin (65mg/kg body weight) dissolved in an equivalent volume of 0.1M sodium citrate buffer. Blood sample was obtained from the tail vein to determine the hyperglycaemic state on the 3rd, 14th and 28th day. Three days after the hyperglycaemic had been confirmed, group C was treated orally with 200mg/kg body weight of aqueous leave extract of *Xylopiya aethiopic* for twenty-five days. At the end of the treatment, the animals were sacrificed and fixed in 10% formol saline and Karnovsky fixatives and processed for histological and electron microscopic study respectively.

Result: The histopathological assessment in the normal control (group A) revealed normal histoarchitecture with numerous acinar cells while the ultrastructural assessment showed normal zymogen granules and mitochondria. Parenchyma atrophy and exocrine fibrosis was seen in the pancreas of the diabetic group. Microscopically, there was a disruption and depletion of acinar

cells' population in group B (diabetic group) when compared with the control group. The ultrastructural assessment revealed a significant decline in the zymogen granules, this observation is suggestive of compromised digestive function in the animals; there was also a reduction of mitochondria in the untreated group when compared with the *Xylopi aethiopia* extract treated group. The histopathological assessment and the ultrastructural observation of the *Xylopi aethiopia* extract treated group showed an improvement towards normalizing the necrotic structures seen in the untreated diabetic group.

Conclusion: *Xylopi aethiopia* has a potential of ameliorating compromised structures in the exocrine pancreas and by extension may be adopted for the management of diseases associated with diabetes of the exocrine pancreas

Keywords: Diabetic mellitus, exocrine pancreas, *Xylopi aethiopia*, acinar cells, streptozotocin, diabetes of the exocrine pancreas, type II diabetes mellitus.

ABSTRACT – A011

Title: Comparative Effect of Isometric Exercises on Selected Cardiorespiratory Parameters among Pregnant Women in Third Trimester in Ile-Ife

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Background: Pregnancy induces significant physiological changes to support the developing fetus, notably affecting maternal hemodynamics. These changes are similar to the adaptations seen during physical exercise and are critical for maintaining both maternal and fetal health. This study evaluated the effects of different isometric exercise combinations: Isometric Hand-Grip (IHG), IHG with Isometric Leg-Extension (IHG-LE) and IHG with Wall-Squat (IHG-WS) on various cardiorespiratory parameters among pregnant women in their third-trimester attending the antenatal clinic of obstetrics and gynaecology at Obafemi Awolowo University Teaching Hospital Complex (OAUTHC), Ile-Ife, Nigeria.

Methods: This research was a three-group quasi experimental study involving 42 participants. Participants were purposely assigned into each of the experimental groups viz IHG, IHG-LE and

IHG-WS. Each participant had the exercises over a period of four weeks and only 31 of the participants completed the four-week intervention. Various sociodemographic, physical, and gestational characteristics were recorded, using instruments like digital sphygmomanometers, handgrip dynamometers, and pulse oximeters. Blood pressure (SBP and DBP), heart rate (HR), oxygen saturation (SPO₂), respiratory rate (RR), and perceived exertion were assessed at baseline, second week, and the fourth week. Data was analysed using descriptive statistics of frequency, percentage, mean and standard deviation. Repeated measure Analysis of variance (ANOVA) was used to compare variables within each group, mixed method Analysis of Variance (ANOVA) was used to compare variables between the 3 groups. The alpha value was set at $p \leq 0.05$.

Results: Results revealed that the majority of the participants were between 28-33 (41.9 %) weeks of gestation. The mean Systolic Blood Pressure (SBP) readings of participants between the experimental groups (IHG, IHG-LE, IHG-WS) in the fourth week were (115.10 ± 19.78, 117.00 ± 9.94, 107.09 ± 8.34) mmHg respectively. The mean Diastolic Blood Pressure (DPB) readings of participants between the experimental groups at fourth week were (72.70 ± 21.77, 64.40 ± 7.59, 62.45 ± 6.14) mmHg respectively. The IHG-WS group showed more pronounced improvements and decreases in systolic and diastolic blood pressure when compared to the IHG group and IHG-LE group, although the reductions were not statistically significant ($p > 0.05$). The mean Heart Rate (HR) readings of participants between the experimental groups in the fourth week were (94.10 ± 10.30, 92.10 ± 13.59, 94.18 ± 11.78) mmHg respectively. IHG-WS group showed more reduction in Heart rate (HR) compared to IHG group and IHG-LE group but non of the groups were statistically significant ($p > 0.05$). The mean Oxygen saturation (SPO₂) readings of participants between the experimental groups at fourth week were (98.40 ± 0.52, 97.30 ± 2.83, 98.27 ± 1.56) mmHg respectively. IHG and IHG-WS group shows no effect on the SPO₂ throughout the period of intervention, when compared with the IHG-LE group that causes reduction in the SPO₂ throughout the period of intervention, but not statistically significant in any of the experimental groups ($p > 0.05$). The mean Respiratory Rate (RR) readings of participants between the experimental groups at fourth week were (21.20 ± 3.12, 19.80 ± 2.74, 22.36 ± 3.56) mmHg respectively. IHG-WS group cause an increase in the mean value of respiratory rate compared to IHG and IHG-LE groups across the time period but not statistically significance. The mean perceived exertion readings of participants between the experimental groups at fourth week were (2.60 ± 1.71, 2.30 ± 1.42, 2.55 ± 1.51) mmHg respectively. The IHG group, IHG-LE and IHG-WS group show reduction in the level of perceived exertion throughout the period of the intervention in all the experimental groups but not statistically significance ($p > 0.05$).

Conclusion: Overall, the study suggests that isometric exercises, including IHG, IHG-LE, and IHG-WS, may help manage blood pressure and heart rate in pregnant women. However, the effects on cardiorespiratory parameters were not statistically significant within the study's timeframe

Keywords: blood pressure, isometric handgrip exercise, isometric leg-extension, isometric wall squat exercise, pregnancy, cardiorespiratory parameters, Third trimester.

ABSTRACT – A012

Title: Effects of Aqueous Leaf Extract of *Crassocephalum crepidiodes* (Benth) S. Moore on Gentamicin-induced Nephrotoxicity in Male Wistar Rats

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Background: This study examined the effect of aqueous extract of *Crassocephalum crepidiodes* (AECC) leaves on renal parameters like albumin, creatinine, cystatin C and blood urea nitrogen (BUN), oxidative biomarkers like malondialdehyde (MDA) and glutathione (GSH) of gentamicin induced rats, and the histology of the kidney of the rats. These were with a view to providing information on the possible therapeutic activity of AECC on gentamicin induced nephrotoxicity in male Wistar rats.

Methods: Thirty-five male rats (150-200 g) were randomly assigned into seven groups (n = 5). Group 1 received 1 ml/kg b.w of distilled water only for 4 weeks; group 2 was given 100 mg/kg/day b.w of gentamicin only for 1 week; group 3 received 100mg/kg/day b.w of AECC only for 4 weeks and groups 4, 5, and 6 received 100 mg/kg/day b.w of gentamicin only for 1 week and 50, 100 and 150mg/kg/day b.w of AECC respectively for another 4 weeks. Gentamicin and AECC were administered interperitoneally and orally, respectively. Renal parameters and oxidative stress markers were quantified in the plasma using appropriate kits. Histology of the kidney was done using Heamatoxylin and Eosin stain. Data obtained were analysed using one-way ANOVA, and alpha level set at $p < 0.05$.

Results: The results showed a significant decrease in the concentration of plasma albumin (g/dl) and cystatin C (ng/ml) of rats in group 2 (0.54 ± 0.02 and 0.28 ± 0.02 , respectively) when compared with their group 1 (0.99 ± 0.08 and 0.69 ± 0.02 , respectively) and a significant increase in the extract treated group 7 (0.95 ± 0.03 and 0.64 ± 0.03 , respectively). There was a significant increase in plasma creatinine ($\mu\text{mol/l}$) and BUN (mg/dl) level in group 2 (76.54 ± 1.04 and 11.77 ± 0.58 , respectively) when compared with group 1 (37.03 ± 1.91 and 6.18 ± 0.54 , respectively) and a significant decrease in extract treated groups 5, 6 and 7 (62.77 ± 2.49 , 58.50 ± 0.18 and 43.20 ± 2.23 , respectively) and (5.67 ± 0.44 , 5.23 ± 0.09 , 7.21 ± 0.47 , respectively) when compared to group 2. There was significant decrease in GSH (Mm/l) of rats in group 2 (0.26 ± 0.02) when compared with group 1 (0.49 ± 0.03) and a significant increase in the plasma MDA level (nmol/g) of rats in group 2 (8.27 ± 0.47) when compared with group 1 (3.82 ± 0.29). However, a significant increase in the plasma GSH level and a significant decrease in the plasma MDA level in the extract treated groups was observed. Gentamicin induced apparent alterations in the histological structure of kidneys of the rats. Treatment with AECC ameliorated the harmful effects of gentamicin which could be due to its antioxidant properties.

Conclusion: The study concluded that *Crassocephalum crepidiodes* leaf extract has ameliorative effects on gentamicin-induced kidney injury, with the 150 mg/kg dose being the most effective.

Keywords: *Crassocephalum crepidiodes*, gentamicin, nephrotoxicity, Wistar rats