COLLEGE OF MEDICAL SCIENCES
UNIVERSITY OF BENIN

Journal of Medicine & Biomedical Research

Proceedings of the 1st Annual Scientific Conference of the College of Medical Sciences

Theme
Medical Education & Brain Drain:
Implication for Health Workforce Development in Nigeria
28th - 29th August 2023

Akin Deko Main Auditorium
UNIBEN, Benin City

SUPPLEMENT AUGUST 2023

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TABLE OF CONTENTS

Peer Mentoring as a Veritable Tool for Professional Development: Experience from the University of Benin Medical and Dental Graduating Class of 2008

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ABSTRACT

Background: Mentoring plays a crucial role in fostering professional development and facilitating collaborations, particularly in academic medicine.[1] While traditional mentoring approaches are widely recognized, alternative models like peer mentoring have also gained attention and investigation. In peer-mentoring programs, individuals of similar academic rank and interests collaborate within a facilitated framework, often guided by a faculty member of higher academic standing, to collectively pursue their scholarly goals.[2] We describe a case study of a peer-mentoring group of doctors who were former classmates of the University of Benin College of Medical Sciences graduating class of 2008 to emphasize the value of peer-mentoring and report on the success of the group outcomes.

Methods: The aim of the group was to build research capacity of interested clinicians who lacked the support or experience in conducting research. The group consisted of 14 clinicians and was led by three specialists with extensive research experience and training including PhDs and familiarity with research contexts in the United Kingdom and the United States. The short- and long-term goals of the group were established from the onset to guide group activities. They include insisting on international best practices regarding research and publication ethics, getting additional expert input that the group didn't have in-house and using the principle of see-one, do-one, and teach-one throughout our processes. The group members communicated through video Zoom conferences held every 2 to 4 weeks depending on the demands of the research project, in addition to regular email exchanges, updates on a WhatsApp group, and phone calls. The group leaders maintained another dedicated WhatsApp platform for ongoing engagement. Tasks were assigned to mini-groups and progress was monitored by mini-group heads who, in turn, were supervised by the main group leaders. Participation was tracked using an authorship guide tool to ensure fairness. At the one-year anniversary of the group, a comprehensive program assessment was conducted via a Zoom meeting to evaluate the outcomes and impact of the initiative on participants competence in development of a research question, article screening, risk of bias assessment, stages of systematic review, application for waiver of Article Processing Charge (APC) and successful submission of a completed research paper.

Results: At the end of the first year, two research papers had been published in A-list journals and a primary mixed-methods study was ongoing. The group members gained practical knowledge of all the stages of conducting a systematic review, starting from developing a research question and ending in successfully submitting a completed research paper. The institutional access of group leaders was leveraged to obtain access to databases and journal articles that would have otherwise required significant monetary commitment. The group also obtained waiver for the APC for journal publications. Lastly, group members had the opportunity to disseminate their research in conference presentations. The group participants have grown from 14 to 24 members. At the one-year audit, participants reported satisfaction and improvement in skills needed for academic success.

Conclusion: Peer mentorship is important for professional development and career progression. It could reduce the disparities in access to expertise, funding, research tools, and opportunities between academic institutions in high- and low-and middle-income countries, essentially turning brain drain into brain gain.

Keywords: Peer-mentoring; Professional development; Academic Medicine; Brain-drain; Brain-gain
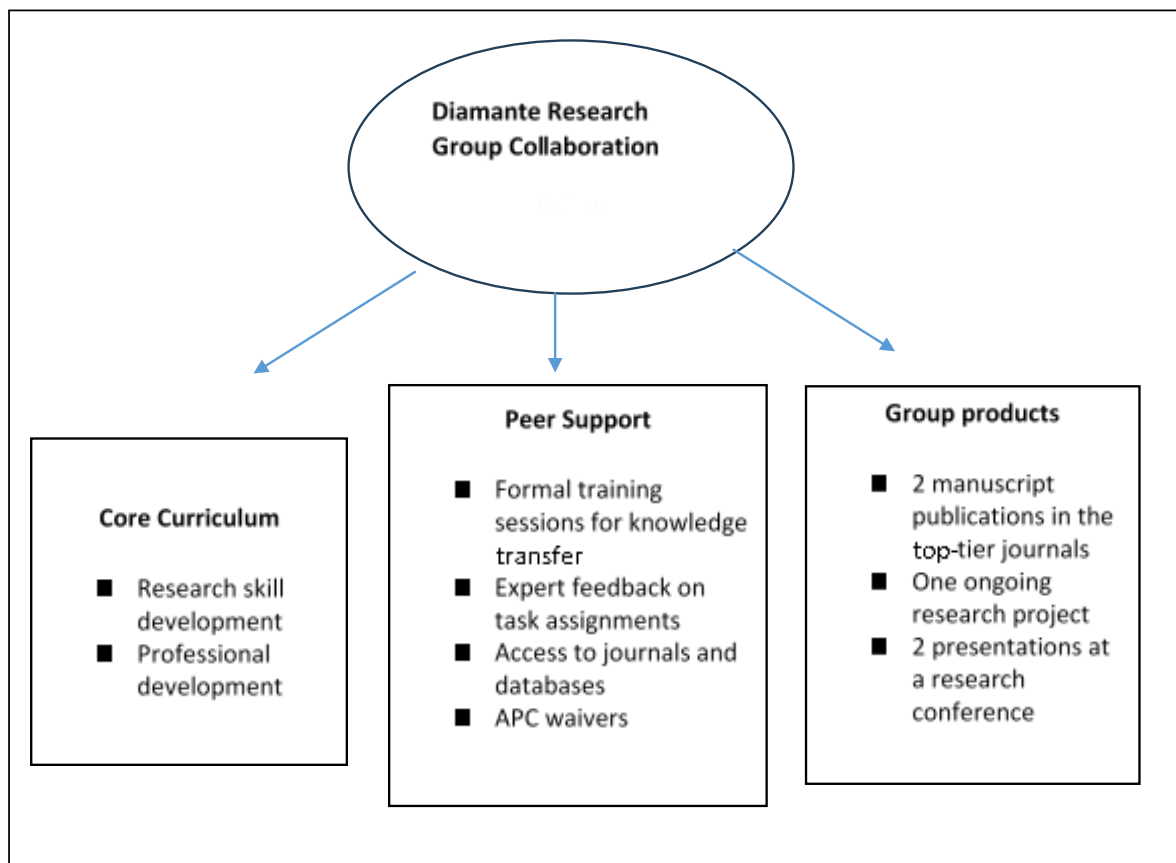
Diamante research group peer mentoring model adapted from the iMeRGE peer mentoring model by Bussey-Jones et al (2006).[3]

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CMS-2023_002
Evaluation of the Anti-Asthmatic Effects of Garcina Kola Extract

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ABSTRACT

Background: The symptoms of bronchial asthma include acute, recurring, and chronic episodes of severe airway constriction. The trachea and bronchi are more sensitive to various stimuli, which defines it. A complex interaction between genetic and environmental factors leads to a global health problem (Latenser and Lucktong, 2000). Of all the different respiratory conditions that affect people, bronchial asthma is the most common and severe one. It is estimated that 1% to up to 18% of the general population will experience the illness at some point in their lives (Masoli et al., 2016, Ibulubo et al., 2012, Irvinee, 1961, Ebowonyi and iyawe, 2005). The aim of this study is to evaluate the anti-asthmatic effect of Garcina Kola Extract on ovalbumin induced asthma and interleukin 1b gene expression in guinea pig animal models.

Methods: Adult guinea pigs weighing 422.3 ± 70.8 g (Mean ± SD) of either sex were used. The males were separated from the females.They were given a two-week acclimation period in the animal home of the University of Benin's School of Basic Medical Sciences' Department of Anatomy. The animals were given 0.2% histamine dihydrochloride aerosol in a glass chamber measuring 60 x 56 x 60 cm using an Omron® (Omron Healthcare Ltd, Japan) compressor nebulizer (rate of 0.4 ml/min and particle size of 5 m) until preconvulsive dyspnea (PCD) was noticed.

Results: The results showed that albumin significantly up-regulated the expression of interleukin-1B gene in ovalbumin induced asthma in guinea pigs ($*p < 0.05$) when compared to control. It shows that Garcina Kola extract at 25 mg/kg and at 50 mg/kg significantly up-regulated interleukin-1B gene in ovalbumin induced asthma in guinea pigs when compared to normal control ($*p < 0.05$). Garcina Kola extract at 100 mg/kg showed a significant down-regulation of the interleukin-1B gene when compared to negative control (albumin) ($\# p < 0.05$).

Conclusion: This study showed that Garcina kola Extract has a significant antiasthmatic effect on asthma induced by ovalbumin. Its effect was seen in its ability to reduce the onset of preconvulsive dyspnea (allergy response) and in the significant up-regulation of interleukin-1B gene in ovalbumin induced asthma in guinea pigs when compared to normal control ($*p < 0.05$).This result gives credence to the ethnomedicinal use of kolaviron for cough.

Keywords: Garcina kola Extract, Ovalbumin, Bronchial Asthma.
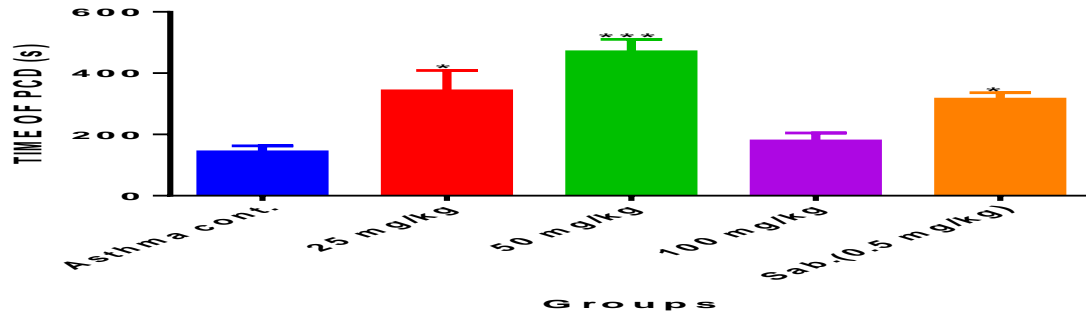
FIGURE 1: The 70 % ethanol extract of Garcinia kola at 25 mg/kg (*p<0.05), 50 mg/kg (***p<0.001) and salbutamol, 0.5mg/kg (*p<0.05) increase the latency to preconvulsive dyspnea compared to the Asthma control .

GAPDH

IL-1β
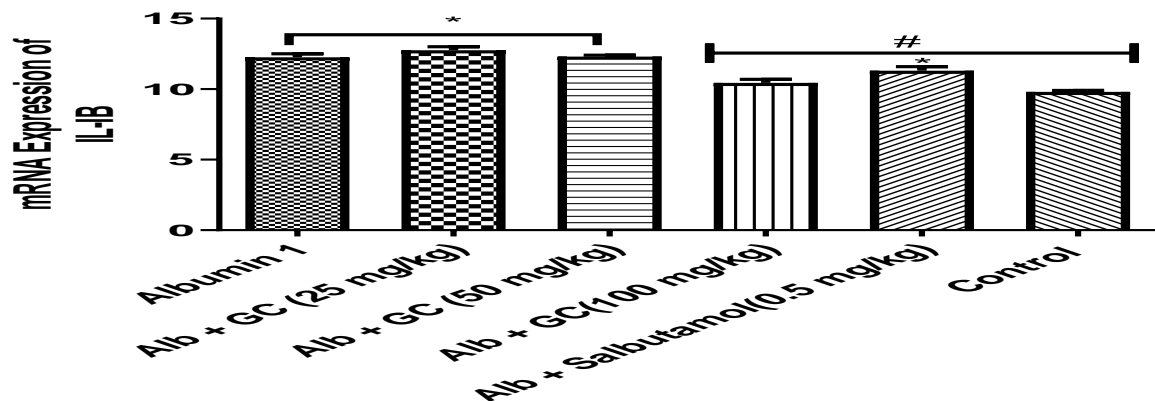
Figure 2: showing the effect of kolaviron on Interleukin-1B gene expression in ovalbumin induced asthma in guinea pigs. Values are represented as mean ± S.E.M., n =5 per group. Statistically significant (*P<0.05 versus normal control, # P<0.05 versus albumin (negative control).

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CMS-2023_003
How Artificial Intelligence is Reshaping Healthcare and Education: A Narrative Review

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ABSTRACT

Background: Artificial intelligence (AI) is a transformative technology that has the potential to revolutionize various sectors due to its ability to analyze vast amounts of data, learn from patterns, and make predictions or recommendations. This narrative review aimed to highlight applications of AI in healthcare and education.

Methods: To conduct this narrative review, a comprehensive search was performed using the databases PUBMED and Google Scholar. The search strategy included the key terms "Artificial Intelligence AND Health AND Education". The identified publications were screened based on relevance to the topic. The inclusion criteria encompassed articles published within the last 10 years, written in English, and peer-reviewed. The selected articles were reviewed, and their findings were synthesized using the narrative synthesis approach.

Results: The applications of AI in healthcare can be categorized into four main thematic areas: diagnostics and imaging, clinical decision support systems, robotics and automation, and personalized/precision medicine. AI algorithms analyze medical images to detect patterns or abnormalities, aiding in early and accurate diagnosis. AI-assisted image reconstruction can enhance image quality, reducing radiation exposure for patients. Clinical decision support systems utilize AI to provide evidence-based recommendations and treatment options by analyzing patient data and medical records. Robotics and automation in healthcare assist with tasks such as medication dispensing, sample handling, and surgery, enhancing precision and reducing human error. Surgical robots assist surgeons to perform complex procedures with increased precision, reducing invasiveness and improving patient recovery. Robotic prosthetics and exoskeletons can restore mobility and functionality for individuals with physical disabilities, improving their quality of life. AI-driven personalized medicine utilizes patient data, including genomic information, to identify disease-specific biomarkers, genetic variations, and risk factors, enabling targeted interventions and personalized treatment plans. AI also supports real-time patient monitoring and enables timely interventions thus preventing disease progression. All these applications advance personalized/precision medicine. In the field of education, AI has both learner-centred and educator-centred applications. Personalized learning platforms can adapt content and activities to individual students' needs, preferences, and learning styles, enhancing engagement and knowledge retention. Intelligent tutoring systems provide personalized feedback and guidance, to help students overcome learning challenges. Virtual and augmented reality technologies can make complex concepts more tangible and interactive using immersive learning experiences. All of these produce better educational outcomes. For educators, AI can assist in grading and assessments which free up time to concentrate on teaching. AI also provides educators with unique insights about students' performance which can help to personalize learning. Despite these potential benefits, several challenges and ethical considerations need to be addressed. Data privacy and security are paramount when dealing with sensitive health and educational information. Ensuring fairness and transparency in AI algorithms is crucial to mitigate bias and prevent discrimination. Equitable access to AI technologies and ethical considerations regarding their use in decision-making and impact on workforce dynamics also require consideration.

Conclusion: AI is reshaping the fields of healthcare and education by enhancing efficiency, transforming service delivery and improving outcomes. However, it is essential to address the challenges and ethical considerations associated with their adoption.

Keywords: Artificial intelligence; Health; Medicine, Education

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CMS-2023_004
Drivers of Health Workers' Migration, Intention to Migrate and Non-Migration from Low-Middle Income Countries, 1970–2022: A Systematic Review

Toyin-Thomas P[1,2], Ikhurionan P[3], Omoyibo EE[4], Iwegim C[5], Ukueku AO[6], Okpere J[7], Nnawuihe UC[8], Atat J[9], Otakhoigbogie U[10], Orikpete EV[11], Erhiawarie F[12], Gbejewoh EO[13], Odogu U[14], Akhirevbulu ICG[15], Kwarshak YK[16], Wariri O[17,18]*

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ABSTRACT

Background: The migration of healthcare workers (HWs) from low/middle-income countries (LMICs) is a pressing global health issue with implications for population-level health outcomes. We aimed to synthesise the drivers of HWs' out-migration, intention to migrate and non-migration from LMICs.

Methods: We searched Ovid MEDLINE, EMBASE, CINAHL, Global Health and Web of Science, as well as the reference lists of retrieved articles. We included studies (quantitative, qualitative or mixed-methods) on HWs' migration or intention to migrate, published in English between 1 January 1970 and 31 August 2022. The retrieved titles were deduplicated in EndNote before being exported to Rayyan for independent screening by three reviewers.

Results: We screened 21 593 unique records and included 107 studies. Of the included studies, 82 were single-country studies focusing on 26 countries, while the remaining 25 included data from multiple LMICs. Most of the articles focused on either doctors {65% (69 of 107)} and/or nurses {54% (58 of 107)}. The UK {45% (48 of 107)} and the USA {42% (45 of 107)} were the top destination countries. The LMICs with the highest number of studies were South Africa {16% (17 of 107)}, India {12% (13 of 107)} and the Philippines {7% (7 of 107)}. The major drivers of migration and intention to migrate were macro-level and meso-level factors. Remuneration (83%) and security problems (59%) were the key macro-level factors driving HWs' migration/intention to migrate. In comparison, career prospects (81%), good working environment (64%) and job satisfaction (58%) were the major meso-level drivers. On the other hand, the most common drivers of non-migration were family ties (30%), job satisfaction (20%), advancing age (15%), sociocultural barriers (15%) and the cost of migration (13%).These key drivers have remained relatively constant over the last five decades and did not differ among HWs who have migrated and those with intention to migrate or across geographical regions.

Conclusion: Growing evidence suggests that the key drivers of HWs' migration or intention to migrate are similar across geographical regions in LMICs. Opportunities exist to build collaborations to develop and implement strategies to halt this pressing global health problem.

Keywords: Healthcare workers, migration, non-migration, low and medium income countries.
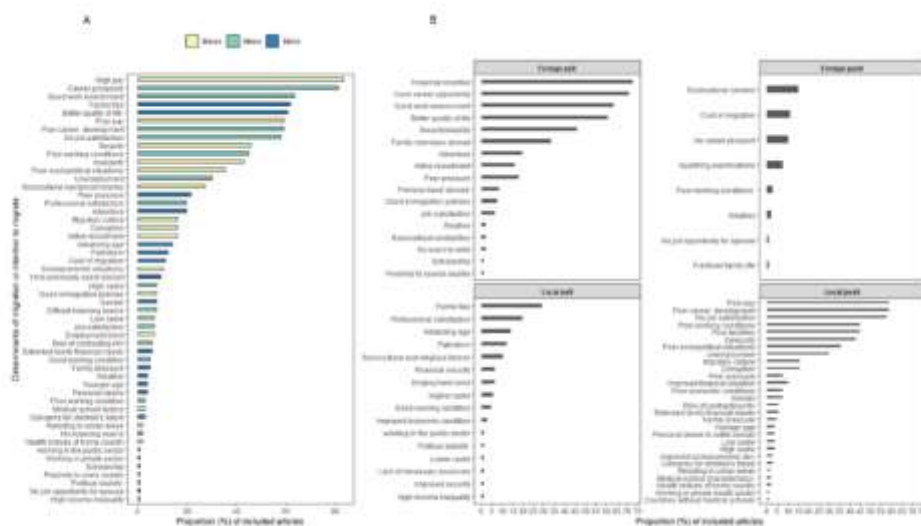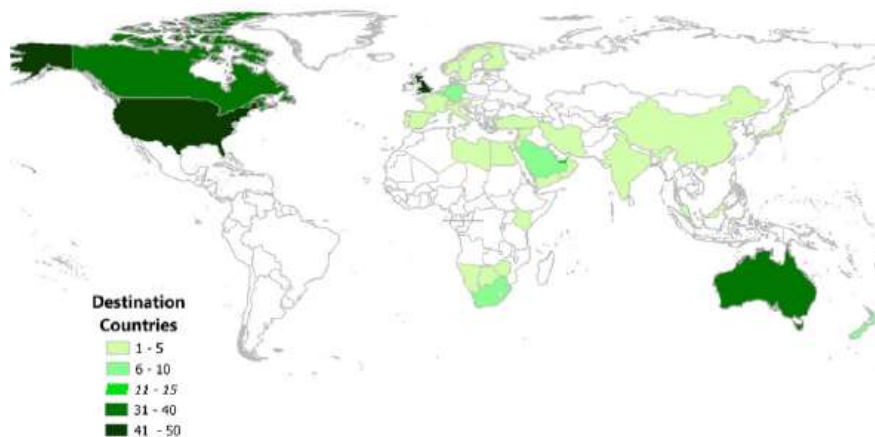
Drivers of health workforce migration from low/middle-income countries (1970–2022) summarised using two conceptual frameworks (A) macro-level, meso-level and micro-level factors[38]; and (B) push and pull factors.[27]

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CMS_2023_005

Antimicrobial Use in a Geriatric Population: Findings from a Point Prevalence Survey in a Southern Nigerian Teaching Hospital

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ABSTRACT

Background: Antimicrobial resistance (AMR) is a global public health threat that is worsened by the inappropriate use of antimicrobial agents. In developing countries, lack of antimicrobial stewardship (AMS) programs, institutional guidelines, and antibiograms, coupled with unregulated prescribing contributes to high levels of antimicrobial use, spread of multidrug-resistant organisms and increasing AMR rates. Elderly persons are particularly vulnerable to infections due to their weakened immune system and multiple comorbidities, often requiring antimicrobial therapy. In both developed and developing countries, healthcare utilization rates are also disproportionately higher among this demographic group making them a target population for AMS interventions. Point prevalence surveys (PPS) are useful tools for assessing antimicrobial use and prescribing practices in hospitals. Though used extensively in Nigeria, there are no exclusive data on geriatric patients. The aim of this study was to determine the point prevalence of antibiotic use in a geriatric population using a globally accepted and validated tool.

Methods: We conducted a descriptive PPS in the ward for the elderly, University of Benin Teaching Hospital using the Global-PPS template. All patients who had been admitted for at least 24 hours and were receiving antimicrobials on the day of the survey were included. Ward level data (number of beds and patients) were collated. Patient level data (age, gender, antimicrobial agents, number of doses per day, route of administration, indications for treatment and documentation of indication, stop or review date of prescription, microbiological data and compliance with prescribing guidelines) were entered into a Microsoft Excel sheet for analysis. Antibiotics were classified using the World Health Organisation categorization of 'Access', 'Watch', and 'Reserve' (AWaRe classification). Ethical clearance was obtained from the hospital's health research ethics committee.

Results: The ward had a total of 20 beds; 18 patients including nine (50%) males were admitted giving a bed occupancy rate of 90%. The mean age was 70.2 ± 7.8 years. All patients (100%) were receiving at least one antibiotic: 8/18 (44.4%) received a single antibiotic, 7/18 (38.9%) received two antibiotics while 3/18 (16.7%) were receiving three antibiotics.
Table 1 shows the antimicrobials patients were receiving on the day of the survey. The most commonly prescribed antibiotics were metronidazole and ceftriaxone. Fourteen (77.8%) patients were receiving at least one 'Watch' antibiotic while four (22.2%) were receiving only 'Access' antibiotics. Indications for antibiotic use were community acquired infection in 13/18 (72.2%), healthcare-associated in 4/18 (22.2%) and not indicated in 1/18 (5.6%). Six patients (33.3%) each had clinical diagnoses of pneumonia and sepsis; two (11.1%) each had cystitis and skin/soft tissue infections. Antibiotic use was supported by microbiological culture results in only 5 (27.8%) patients. Biomarkers signifying infection were present in 10 (55.6%). Stop/Review dates were not indicated on any patients' charts.

Conclusion: This snapshot of antimicrobials prescribed in the geriatric ward of a Nigerian teaching hospital showed a high prevalence of antimicrobial use and the low proportion of patients with microbiological confirmation of infection. A combination of AMS interventions and improved use of microbiology laboratory services may help tackle AMR. Larger studies are recommended to validate the findings.

Keywords: Antimicrobial resistance; Antimicrobial stewardship; Geriatric; Nigeria

TABLE 1: Antimicrobials in use in the Geriatric ward

Antimicrobial	AWaRe category	Frequency	Percent
Metronidazole	Access	7	38.9
Ceftriaxone	Watch	7	38.9
Amoxicillin	Access	4	22.2
Levofloxacin	Watch	3	16.7
Meropenem	Watch	2	11.1
Clarithromycin	Watch	2	11.1
Clindamycin	Access	2	11.1
Ciprofloxacin	Watch	1	5.6
Azithromycin	Watch	1	5.6
Cefuroxime	Watch	1	5.6
Anti-Koch's	NA	2	11.1
Artemisinin based combination therapy	NA	3	16.7

NA-Not applicable

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CMS-2023_007
Gullain-Barre Syndrome associated with *Helicobacter pylori* Isolates from Rectal Swabs of Four Patients: A University Teaching Hospital, Benin City Experience

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ABSTRACT

Background: A Gram-negative bacteria known as *Helicobacter pylori* (*H. pylori*) is thought to be the cause of autoimmune gastrointestinal diseases. Additionally, this pathogen has been connected to peripheral neuropathies and extra-gastrointestinal illnesses with autoimmune sequelae. A devastating autoimmune demyelinating condition of the peripheral nerves, Guillain-Barré syndrome (GBS) typically manifests after an infection. H pylori may be involved in the 30% of GBS cases that *Campylobacter jejuni* is blamed for. Growing evidence points to the potential contribution of *H. pylori* infection to the emergence of GBSH.A Gram-negative bacterium known as *helicobacter pylori (H. pylori) i*s thought to be the cause of autoimmune gastrointestinal diseases. Additionally, this pathogen has been connected to peripheral neuropathies and extra-gastrointestinal illnesses with autoimmune sequelae. A devastating autoimmune demyelinating illness of the peripheral nerves, Guillain-Barré syndrome (GBS) typically has a post-infectious aetiology.The Aim of the study is to show that rectal swabs to isolate *Helicobacter pylori* as a cause of Guillain - Barre syndrome should be a routine instead of gastric biopsy.

Methods: The study was a Retrospective Cross Sectional Study. This involved a review of Case notes of Patients that were admitted in the Neurology Unit of UBTH from 2014-2019 , been managed for Gullain-Barre syndrome associated with *H.pylori* infection and also a review of their Medical microbiology laboratory test records during management especially their rectal swab Microscopy , Culture and Sensitivity results. It has never being the practice of the Neurology unit to do rectal swabs for patients with Guillain - Barre syndrome, this was done by the medical microbiology unit upon invitation to see these patients. Patients with incomplete or missing medical data were excluded from the study.

Results: Four case series of one male and three female patients, age ranged from 7 years to 23 years with the mean age of 15 ± 8 years. The most common initial symptom was weakness in the extremities which was seen in all the patients. Motor deficit involved all four limbs in all the patients.The mode of onset was progressive in all the cases and ascending. History of peptic ulcer disease was present in all four patient and *H.pylori* was isolated from rectal swabs from all the patients. 75% (3) of the patient showed marked improvement on commencement of Omeprazole and erythromycin, while 1 (25%) did well on amoxicillin and Omeprazole; 1 (25%) had complications of bilateral patchy lower limb skin exfoliation and disquamation (due to prolonged lowerlimb neuropathy). A case of death was recorded. On discharge complete functional recovery was noted in 2 (50%), while 1 (33%) had partial recovery.

Conclusion: This study of four case series highlights a relatively inexpensive and straightforward faecal specimen by rectal swab, free of specimen collection complications like bowel perforation and readily available faecal specimen compared with gastric biopsy specimen, in the laboratory diagnosis and isolation of *Helicobacter pylori,* a cause (among other causes) of Gullain-Barre Syndrome, which is a medical emergency in most cases. In addition Gu͡lain-Barre Syndrome linked wit*h H. pylori* is not always a Post-infectious diseases because medications used to clear the gastrointestinal tract of Bacterial usually lead to recovery from the paralysis caused by Gullain-Barre Syndrome.

Keywords: Gullain – Barre Syndrome; Helicobacter pylori; Rectal swab; Benin City.

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CMS-2023_008
*Abelmoschus esculentus (*Okra*)* Leaf Modulates some Iron Profile and Inflammatory Parameters in Sprague Dawley Rats

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ABSTRACT

Background: Okra is a multipurpose plant which can be consumed freshly or dried. Okra contains iron, β-carotene and other phenolic compounds with important biological properties like flavonol and isoflavonoid derivatives which may possess anti-inflammatory properties. The objective of this study was to determine the effect of okra leaf on some iron regulatory proteins and its anti-inflammatory properties.

Methods: Fifty (50) rats were used for this study. Male and female rats were 25 respectively and grouped into 10 groups of 5 rats per group and each group were fed with a pre-formulated diet of *Abelmoschus esculentus* leaf (10%, 20% and 40%) and diadzein. Hepcidin, ferroportin, ferritin, IL-6, IL-2 and MIP 1β were analyzed using sandwich ELISA kits from Elabscience Biotechnology, Wuhan, China. Full blood count was analysed using Sysmex haemotology autoanlyser. Serum iron was also analysed spectrophotometrically and TIBC calculated.

Results: The results showed that, in male rats, 40% okra leaf-fed group had a significantly higher RBC count (p=0.0419), haemoglobin concentration (HB) (p=0.0054), haeamtocrit (HCT) (p=0.012) and mean cell haemoglobin (MCH) (p=0.0064) when compared to control rats. Serum iron, total iron binding capacity (TIBC), transferrin saturation, ferroportin, ferritin were all significantly higher (p<0.05) in the experimental groups when compared to the controls. However, in female rats fed with 40% okra leaf, there was significantly lower hepcidin concentration (p<0.001) in control group when compared to 10% Okra leaf fed group. Furthermore, the 10% okra leaf-fed group also had a significantly higher hepicidin concentration when compared to the 40% okra leaf-fed groups. IL-6 levels were significantly lower (p<0.01) in female rats fed with 40% okra leaf when compared to the 10% okra leaf-fed group. Macrophage inflammatory protein 1 beta (MIP-1β) in male rats showed that the groups fed with 10%, 20% and 40% okra leaf (p<0.001) had significantly higher levels when compared to control and diadzein administered group.

Conclusion: Our data indicated feed formulated from *Abelmoschus esculentus* leaf is a rich source of non-haem iron. *Abelmoschus esculentus* leaf significantly affects iron metabolism through its action on ferroportin and hepcidin. Also this study indicates that continuous consumption of *Abelmoschus esculentus* leaf may help act as an anti-inflammatory agent.

Keywords: Hepcidin; *Abelmoschus esculentus;* Ferroportin; Anti-inflammatory, Iron
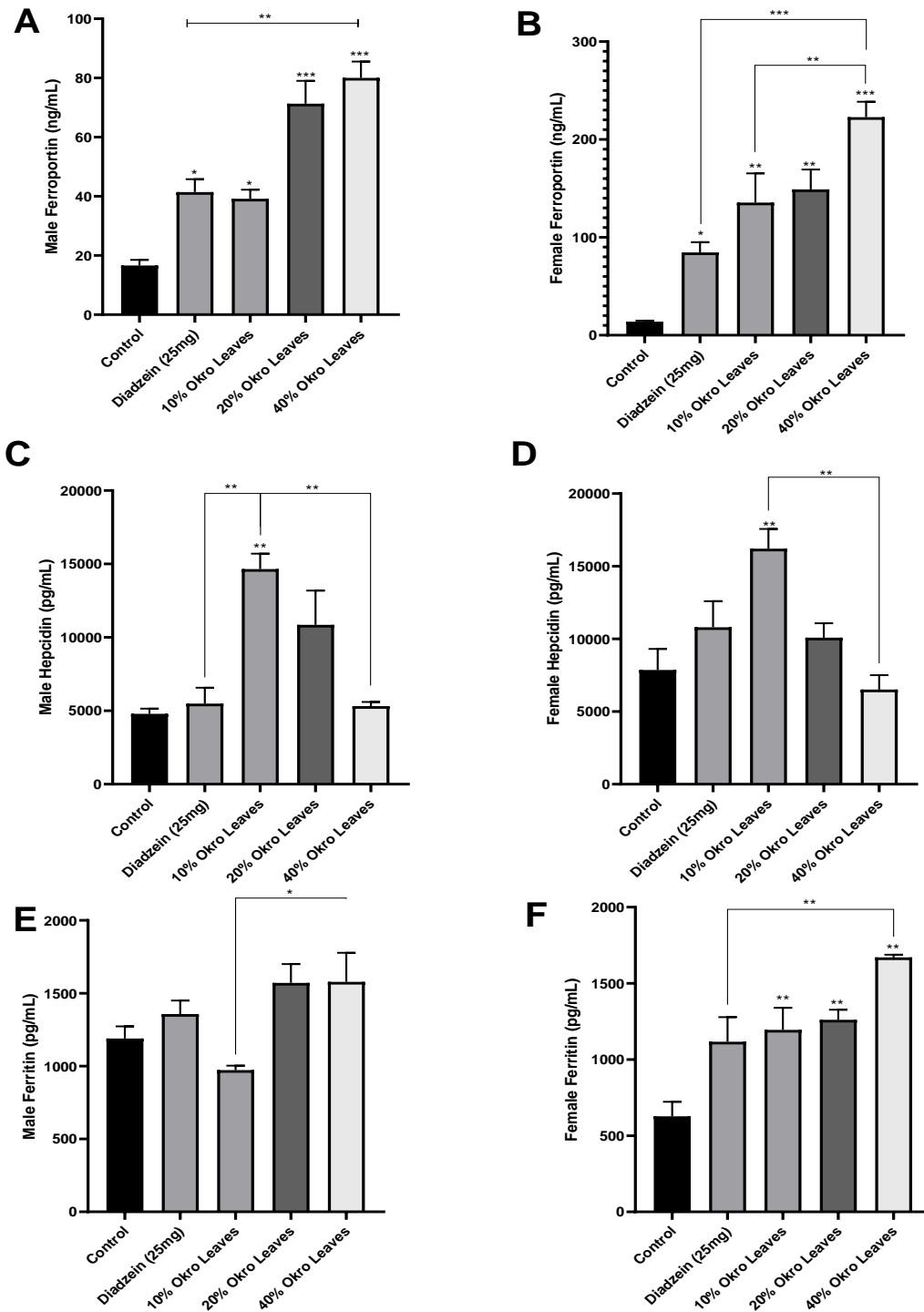
Figure 1: Effect of okra leaf feed on some iron homeostatic parameters. *Panels A and B show the effect of okra leaf on ferroportin in both male and female Sprague Dawley rats. Panel C and D show the effect of okra leaf on hepcidin in both male and female Sprague Dawley rats. Panels E and F show the effect of okra leaf on serum ferritin in both male and female Sprague Dawley rats. Error bar represents mean±SEM. Statistical significance represented by (*p<0.05, **p<0.01, ***p<0.001)*

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CMS-2023_009

Abelmoschus esculentus (Okra) Leaf and *Manihot esculenta* (Cassava) Flour Modulate the Fecundity of Sprague Dawley Rats

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ABSTRACT

Background: The frequency of dizygotic (DZ) twinning varies globally, with the highest rates recorded in Africa. The linking of DZ twinning to environmental and dietary factors has been hypothesized. Our previous study revealed the perception that specific diets in Igbo-Ora, a community with the highest DZ twinning rate in the world, could contribute to this phenomenon. This study was therefore designed to explore the influence of *Abelmoschus esculentus* (okra) leaf and *Manihot esculenta* (cassava) flour in modulating the fecundity of Sprague Dawley rats.

Methods: One hundred and seventy six (176) rats were divided into 11 groups each of male and female rats of 8 rats per group. The groups included a control group, positive control group which were adminstered diadzein at 25 mg/kg body weight; and other groups receiving different feed formulations of okra leaf, cassava flour, or both (10%, 20% and 40%) for two months. In the first phase of the study, male and female Sprague Dawley rats were divided into normal control, positive control (rats fed with a standard phytoestrogen - diadzein), as well as rats that were fed different concentrations of okra leaf, cassava flour, and a combination of okra leaf and cassava flour for two months. Five rats from each group were sacrificed and follicle-stimulating hormone (FSH), *luteinizing* hormone (LH), estrogen, testosterone, progesterone, sex hormone binding globulin (SHBG), and free androgen index (FAI) were determined. Semen parameters were also analyzed in the male rats. In phase 2, the male and female rats were mated using a pre-determined schedule; and the litter sizes of the female groups were recorded.

Results: When mated with control males, the female rats fed with 40% okra leaf produced the highest litter size (8.667±1.20) compared to their control male and female counterparts (5.667±0.333). This group also had significantly higher FSH, progesterone, and lower estrogen levels. The female rats that were fed with diadzein also recorded enhanced litter size and a hormone profile that favoured multiple ovulations. Generally, apart from the normal and positive control groups; the male rats fed with okra leaf had higher testosterone concentration and better sperm parameters compared to those fed with cassava flour enriched meal.

Conclusion: The litter size and sex hormone profile of female rats fed with okra leaf, especially at 40%, indicated the presence of phytochemicals, perhaps phytoestrogens, with pro-ovulatory effects. There were also indications that consumption of okra leaf favoured better sperm parameters in male rats. While the consumption of cassava flour may not have overtly negatively affected the fecundity of male and female Sprague Dawley rats, consumption of okra leaf appeared to have improved it. These preliminary findings point to okra leaf as playing a role in the high DZ twinning rates observed in southwest Nigeria.

Keywords: Okra Leaf, Cassava Flour, Litter Size, Sprague Dawley Rats, Twinning, Igbo-Ora

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CMS-2023_011
Anti-diabetic, Anti-pancreatic Lipase, and Anti-protein Glycation Potential of *Irvingia gabonensis* Stem bark extracts: *In vitro* and *in silico* studies

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ABSTRACT

Background: Diabetes mellitus is a chronic metabolic disorder that affects glucose, lipid, and protein metabolism. Targeting these metabolic derangements can optimize the therapeutic strategy for this disease. Therefore, utilizing *in vitro* and *in silico* models, this work investigated the inhibitory potentials of *Irvingia gabonensis* aqueous and ethanol extracts on α-amylase, α-glucosidase, pancreatic lipase, and protein glycation.

Methods: High performance liquid chromatography (HPLC) was used to identify the compounds found in the stem bark preparations of *I. gabonensis*. The extracts' antidiabetic properties were evaluated *in vitro* by assessing the inhibition of α-glucosidase and α-amylase. The extracts' potential to inhibit pancreatic lipase and protein glycation was also evaluated. *In silico* analysis was used to determine the binding mode and mechanism of interactions between the enzymes and phytochemicals found in *I. gabonensis*.

Results: With an IC_{50} value of 11.47μg/ml, the aqueous extract demonstrated higher inhibitory efficacy against α-amylase compared to the ethanol extract (IC_{50} 19.88μg/ml). However, the ethanol extract had stronger inhibitory activity against α-glucosidase, pancreatic lipase, and protein glycation. Twelve (12) bioactive compounds were identified from the extracts using HPLC. Quercetin ranked highest in binding energy with α-amylase (-6.6 kcal/mol), α-glucosidase (-6.6 kcal/mol), and pancreatic lipase (-5.6 kcal/mol). This was followed by rhamnetin (6.5, 6.5, and 6.1 kcal/mol respectively). Hydrogen bonding, hydrophobic interactions, and pi-pi stacking are forces responsible for the binding of quercetin and rhamnetin to these enzymes. Trp-59 and Asp-197 are critical to the binding of lead compounds to α-amylase; Asp-542 and Tyr-605 are critical to the binding of compounds to α-glucosidase; while Tyr-357, Gly-410, and Lys-444 are critical to the binding of identified compounds with pancreatic lipase.

Conclusion: This study showed that the extracts of *I. gabonensis* stem bark had significant *in vitro* anti-diabetic, anti-pancreatic lipase, and anti-protein glycation activities. The strong binding affinities of some of the identified compounds could be responsible for the inhibitory potential of the extracts. *I. gabonensis* stem bark can be further explored as a source of natural remedy in the treatment of diabetes mellitus.

Keywords: Anti-diabetic, anti-pancreatic lipase, *Irvingia gabonensis, in vitro, in silico*

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CMS-2023_012

Antidiabetic, Insulinotropic and Carbohydrate Metabolizing Effects of *Tetrapleura tetraptera* Saponins in Streptozotocin-Induced Diabetic Male Wistar Rats

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ABSTRACT

Background: We had previously demonstrated that the aqueous root bark of *Tetrapleura tetraptera* exhibits significant antidiabetic, antihyperlipidaemic, and antioxidant effects. The obvious presence of saponins in this extract, as well as the need to decipher the molecular mechanisms of action of this plant, prompted the design of this study. The antidiabetic, insulinotropic, and carbohydrate metabolizing effects of *T. tetraptera* saponins (TTS) were assessed by biochemical and gene expression techniques.

Methods: Saponins were fractionated from *T. tetraptera* root bark using standard methods. Forty-two adult male Wistar rats in six groups of seven rats each served as normal control, untreated diabetic control, positive control (100 mg/kg metformin), and TTS-treated diabetic rats at 10, 20, and 40 mg/Kg body weight. Fasting blood sugar (FBS); plasma insulin; and insulin resistance were determined by biochemical and ELISA methods. Insulinotropic and carbohydrate metabolizing genes were assessed by PCR techniques.

Results: Treatment with TTS significantly ($p < 0.05$) reduced FBS concentrations in diabetic rats especially at 10 mg/kg b.w. Insulin concentration and insulin sensitivity were significantly ($p < 0.05$) increased in treated rats, especially at 40 and 10 mg/kg TTS treated groups respectively. The gene expression studies showed that TTS significantly upregulated major glycolytic (glucokinase, and phosphofructokinase-1 (PFK-1)) and pentose phosphate (glucose-6-phosphate dehydrogenase (G6PDH)) pathway genes; and downregulated gluconeogenic genes (fructose-1,6-bisphosphatase (F-1,6-BPase), phosphoenolpyruvate carboxykinase (PEPCK) especially at the rate-limiting steps. The gene expression studies also showed an increased expression of insulin hormone; glucose transporters (GLUT-4, GLUT-2); incretins (GLP-1, GIP); and reduced expression of the incretin inhibitor dipeptidyl-peptidase-4 (DPP-4).

Conclusion: The observable antidiabetic effects of *T. tetraptera* saponins through various mechanisms of action indicate that *T. tetraptera* saponins may be a great potential pharmacological agent in ameliorating chronic diabetic complications, especially at the lower dose of 10 mg/kg body weight.

Keywords: *Tetrapleura tetraptera*; Saponins; Antidiabetic; Hyperglycemia; Insulinotrophic; Carbohydrate metabolizing genes

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CMS-2023_013
Is Aspartame Culpable in Rising Infertility in Males?

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ABSTRACT

Background: With the recent decline in sperm quantity and quality, resulting in an increased diagnosis of infertility among couples, diet has been named to be one of the many culprits [1]. Aspartame (ASP) is an artificial sweetener commonly used in diverse food and drink industries and pharmaceuticals in place of sugar [2]. Its effect on some organs has been studied however, aspartame's effect on male reproduction remains underreported. Therefore, this study was carried out to evaluate the effects of aspartame on the testis and epididymis of male rats of the Sprague Dawley strain.

Methods: A total of 30 pre-pubertal male Sprague Dawley rats weighing between 80 to 100g; aged three (3) to four weeks were used. After acclimatization for two weeks, they were randomly divided into five groups of six animals each. Food grade ASP was reconstituted using distilled water, and four groups received ASP orally at doses of 40, 80, 160 and 320 mg/kg (via gavage) for 75 days. The control group received 0.5 ml of distilled water for the same number of days. The animals were sacrificed via cervical dislocation twenty-four hours after the last treatment. Blood was collected for serum analysis of testosterone. The vas deferens was collected to determine sperm parameters (sperm motility and sperm morphology); the testis and epididymis were also collected. Portions of the testis and epididymis for histological studies were stored in Bouin's solution, while the rest were homogenized and centrifuged to obtain cytosolic fraction for determination of oxidative stress parameters like malondialdehyde (MDA), superoxide dismutase (SOD) and catalase (CAT).

Results: In this study, it was observed that both the Sperm count (1010 ±21.28 (control); 997.3 ±5.88; 980.3 ±17.01; 935.2 ±21.29; 911 ±17.35), and Sperm motility (74.67 ±0.9189 (control); 72.17 ±0.7923; 70.17 ±0.7032; 68.83 ±0.654; 67.71 ±0.8081) decreased in a dose-dependent manner as the dosage of aspartame increased, while the number of immotile sperm cells increased accordingly. Plasma concentration of testosterone was unaffected ($P > 0.05$) however, histological studies showed increased Leydig cell degeneration as the dose of aspartame increased. Histological sections showed depletion of spermatozoid population in the epididymal ducts and seminiferous tubules of the rats fed 160mg/kg and 320mg/kg aspartame.
Oxidative stress biomarkers like MDA were elevated in the aspartame-treated groups, more especially in the 160 mg/kg (7.513±0.2805) and 320mg/kg ASP treated groups (5.27±0.759), as against the control (2.097±0.2389). However, testis CAT was reduced in the group that received 320mg/kg aspartame (1.009±0.4130) when compared to the control (1.917±0.5149). Testis SOD was also reduced in the groups that received higher doses of aspartame 80mg/kg, 160mg/kg, 320mg/kg (0.1733±0.007149; 0.1633±0.004216; 0.1514±0.003401 respectively) as against the control (0.19±0.01653).

Conclusion: With MDA being a marker of oxidative stress-induced lipid peroxidation [3], it is pertinent to say that aspartame's deleterious effect observed in this study, may be due to oxidative stress-induced lipid peroxidation. However, more investigation needs to be done to ascertain the appropriate mechanism of damage.

Keywords: Male infertility; Semen quality; Aspartame; Oxidative stress; Sweeteners

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CMS-2023_014
Rate of Staphylococcus Aureus Skin Colonization in Patients with Recurrent Furunculosis

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ABSTRACT

Background: Furunculosis (boil) is a deep bacterial infection of the hair follicle associated with abscess formation with accumulation of pus and necrotic tissue. Furuncles appear on the hair-bearing parts of the skin, and the widely known causative agent of this lesion is *Staphylococcus aureus.*[1] There are numerous reports of the association of Staphylococcus aureus skin colonization with recurrent furunculosis[2]. This study was carried out to determine the rate of *S. aureus* skin colonization in patients with recurrent furunculosis.

Methods This cross-sectional study was carried out at the University of Benin Teaching Hospital and the University of Port Harcourt Teaching Hospital involving 96 outpatients with recurrent furunculosis. Recurrent furunculosis was defined as three or more episodes within a 12-month period. Basic demographic data and relevant clinical history were obtained by a self-administered questionnaire. Two swabs were taken from the anterior nares and axilla of each patient to determine colonization with *Staphylococcus aureus.* All swabs were analyzed using standard microbiology techniques. *Staphylococcus aureus* ATCC 25923 was used as positive control.

Results: Eighty-one patients (84.3%) were colonized with *Staphylococcus* aureus. Out of these, 56 (58.3%) colonized at multiple sites while 25(26%) were colonized in only one site (Fig 1). There was a statistically significant association between overcrowding with recurrent furunculosis and colonization with Staphylococcus aureus (x^2=5.15, P-value 0.023); see Table 1. Similarly, patients with recurrent furunculosis who recently took antibiotics (n= 82) were 71 times more likely to be colonized than patients with no history of recent antibiotic use (n=14); (OR 71.5, CI 13.7 – 281.0). (Table 1)

Conclusion: The study shows that there was a high rate of *S. aureus* colonization in patients with recurrent furunculosis. Overcrowding and recent antibiotic usage significantly increase the risk of colonization. To reduce rates of colonization, we recommend a reduction in antibiotic use in patients with recurrent furunculosis.

Keywords: Recurrent furunculosis; *Staphylococcus aureus;* Colonization
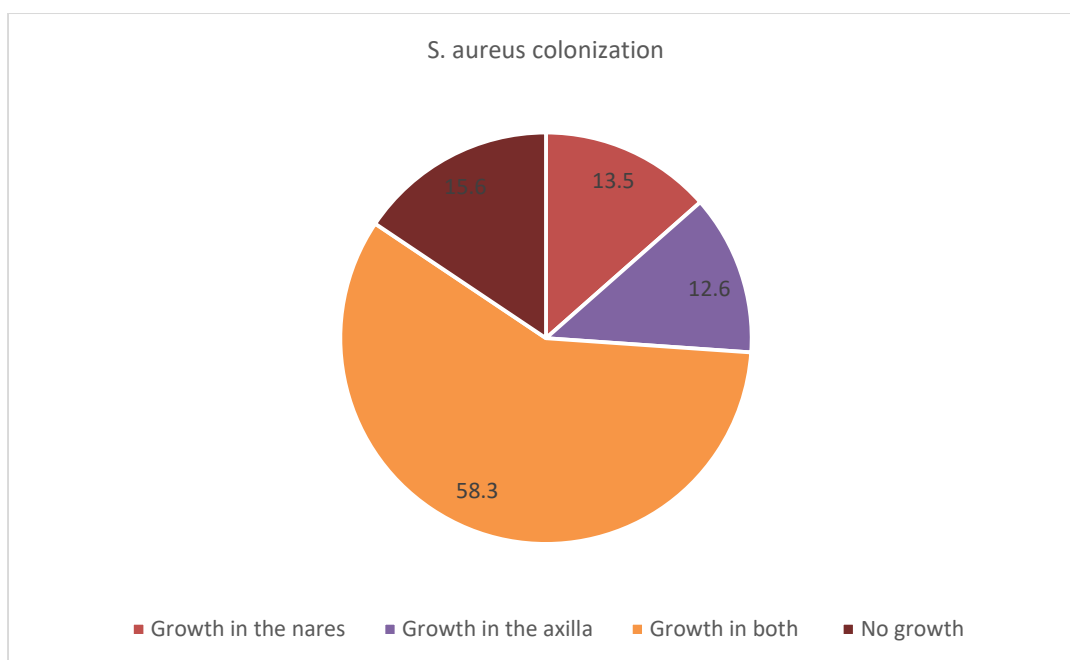
Fig 1: Pattern of _S. aureus_ colonization

Table 1: Comparative distribution of furunculosis by sociodemographic and clinical details

Variables	No. with growth n (%)	No. with no growth n (%)	Chi-square (p-value)
Age range (years)			
<1	2(66.7)	1(33.3)	4.33 (0.740)
1-10	4(80.0)	1(20.0)	
11-20	13(81.3)	3(18.8)	
21-30	27(87.1)	4(12.9)	
31-40	17(77.3)	5(22.7)	
41-50	11(100.0)	0(0.0)	
51-60	5(83.3)	1(16.7)	
>60	2(100.0)	0(0.0)	
Sex			
Male	28(80.0)	7(20.0)	0.79 (0.371)
Female	53(86.9)	8(13.1)	
Recent antibiotics use			
Yes	78(95.1)	4(4.9)	49.26 (<0.0001)*
No	3(21.4)	11(78.6)	
Level of education			
Primary	17(85.0)	3(15.0)	1.14 (0.564)
Secondary	32(88.9)	4(11.1)	
Tertiary	32(80.0)	8(20.0)	
Occupation			
Students	19(79.2)	5(20.8)	3.20 (0.536)
Unemployed	12(80.0)	3(20.0)	
Private employment	15(78.9)	4(21.1)	
Civil servant	15(88.2)	2(11.8)	
Business	20(95.2)	1(4.8)	
Household composition			
One per bed room	4(33.3)	8(66.7)	27.37 (<0.0001)*
2-3 per bed room	35(89.7)	4(10.3)	
>3 per bed room	32(94.1)	2(5.9)	
Hostel	10(90.9)	1(9.1)	
Family history furunculosis			
Yes	46(90.2)	5(9.8)	6.92 (0.031)*
No	14(93.3)	1(6.7)	
Not aware	21(70.0)	9(30.0)	
Recent weight gain			
Yes	51(85.0)	9(15.0)	5.46 (0.065)
No	15(100.0)	0(0.0)	
Not sure	15(71.4)	6(28.6)	
History/ symptoms suggestive of DM			
Yes	19(90.5)	2(9.5)	1.45 (0.483)
No	46(80.7)	11(19.3)	
Not sure	16(88.9)	2(11.1)	

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CMS-2023_015

The Rate of Discordancy between Empiric Antibiotics and Antimicrobial Susceptibility in Infection caused by *Pseudomonas Aeruginosa in* a Tertiary Hospital in Nigeria

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ABSTRACT

Background: Early initiation of appropriate antibiotics is key to the effective management of severe bacterial infections. The initiation of targeted antibiotic therapy is possible only when the causative organism is isolated and subsequently, antimicrobial susceptibility testing is performed. As a result, antibiotics are often administered on an empirical basis guided by clinical presentation, and other relevant histories. Generally, empirical antibiotics differs for both community- and hospital-acquired infections (HAI). In cases of Hospital-acquired infections, the offending pathogens are frequently multi-drug-resistant, this is true for both Gram-positive (e.g., MRSA]) and Gram negative (e.g., *Pseudomonas aeruginosa*) bacteria. As a result, common HAI pathogens such as *Pseudomonas aeruginosa.* should be deliberately targeted because in most cases, frequently empirical antibiotics regime is ineffective against this organism3. The study aimed to determine the rate of discrepancy between empirical antibiotics prescribed and antimicrobial susceptibility results from patients with infection caused by *Pseudomonas aeruginosa.*

Methods: This was a retrospective cross-sectional study involving the review of the clinical consults sent to the Microbiologists at the UBTH, between June 2020 and April 2023. The consults were analyzed for initial diagnosis, reason for invite, empiric antibiotics. Information about various clinical samples sent for culture before or immediately after initiating antibiotics was obtained from the laboratory. The susceptibility profile of *Pseudomonas aeruginosa* isolates was compared with the empiric antibiotics administered. Discordant empiric antibiotic therapy was defined as the administration of regime with no anti pseudomonal activity.

Results: Of the 256 consults received, *Pseudomonas aeruginosa* was isolated from 57(22.3%) patients as pathogens. Out of this, only 22.3% received at least one anti-pseudomonas antibiotics, which puts the total discordant rate at 77.7%. (Fig1) Metronidazole (22.7%) and Ceftriaxone- sulbactam (Tandak) (21.5%) were the most common prescribed empiric antibiotics (fig 2). While the most common reason for consultation was diagnosis of sepsis at 79%%, 66.7% of the ICU patients with *Pseudomonas aeruginosa* bacteremia progressed to septic shock.

Conclusion: Although the commonly prescribed antibiotics in our setting are broad spectrum, however, they lack coverage for *Pseudomonas aeruginosa* which is one of the most common pathogens implicated in HAI In managing HAI, antipseudomonal antibiotics based regime including β-lactams anti- pseudomonas such as piperacillin-tazobactam, ceftazidime, cefepime, meropenem, imipenem, and the flouroquinolones should be our first line of empiric therapy. Administration of inappropriate antibiotics is much more harmful than delayed antibiotics in the management of sepsis and other critical conditions.

Keywords: *Pseudomonas aeruginosa;* Discordant antibiotics; Empiric antibiotics
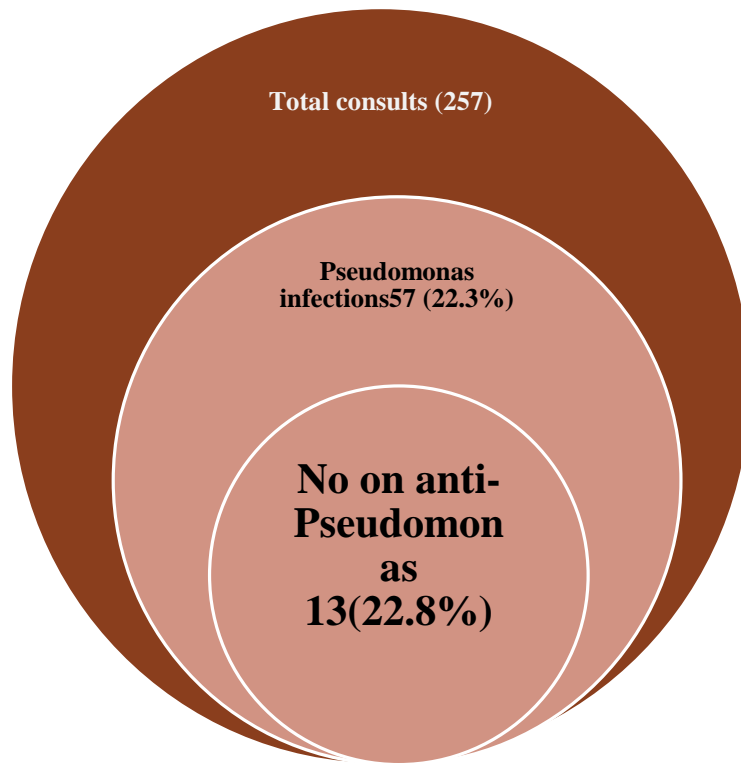
Fig 1: Percentage **of** *Pseudomonas aeruginosa* **isolate and anti-pseudomonas prescribed**
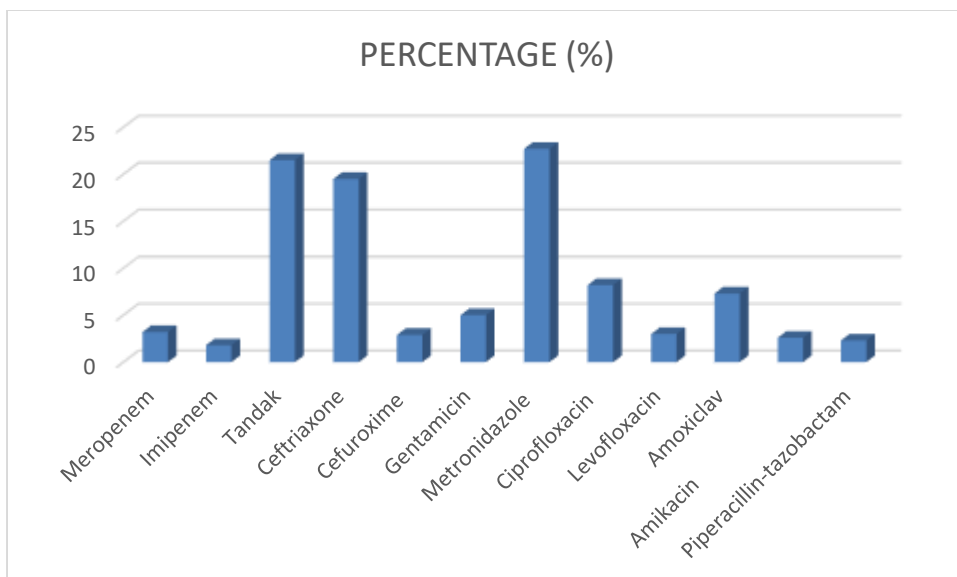
Fig 2: Patterns of empirical antibiotics

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CMS-2023_017
Enhancing Training and Research in Teaching Hospitals through Effective Clinical Care

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ABSTRACT

Background: Teaching hospitals play a crucial role in healthcare education, patient care, and medical research. The quality of clinical care provided in these institutions directly influences the training experiences of healthcare professionals and shapes the research activities conducted. This review aims to explore the significance of effective clinical care, including patient-centered care[1] and evidence-based medicine[2], in shaping training and research in teaching hospitals from a hospital perspective.

Methods: To conduct this review, a comprehensive search was performed on reputable databases such as PUBMED and Google Scholar, using the key terms "Training AND Research AND Clinical care AND Teaching Hospitals." The inclusion criteria encompassed articles published within the last 10 years, written in English, and peer-reviewed. The selected articles were reviewed, and their findings were synthesized using the narrative synthesis approach.

Discussion: Effective clinical care within teaching hospitals is fundamental to the training of healthcare professionals. The delivery of high-quality and patient-centered care allows trainees to gain exposure to a wide range of medical conditions, develop clinical skills, and acquire knowledge. Patient-centered care emphasizes the importance of involving patients in decision-making, understanding their values and preferences, and providing holistic care that addresses their physical, emotional, and social needs. It recognizes the unique individuality of each patient and promotes a partnership between the healthcare provider and the patient, resulting in improved patient satisfaction, adherence to treatment plans, and better health outcomes.[1,3,4] The integration of evidence-based medicine principles into training programs enhances the learning experience, ensuring that trainees are equipped with the latest scientific knowledge and best practices in patient care. Evidence-based medicine emphasizes the integration of clinical expertise, patient values, and the best available evidence to guide clinical decision-making. By incorporating evidence-based medicine into training, teaching hospitals promote critical thinking, clinical reasoning, and the application of scientific knowledge to patient care.[2,3,5] This approach ensures that trainees are exposed to the most up-to-date and effective interventions, leading to improved patient outcomes and the provision of high-quality care.
In the field of research, effective clinical care provides a strong foundation for conducting meaningful studies. Research conducted within the context of clinical care and guided by evidence-based medicine principles enables the investigation of real-world healthcare challenges, the evaluation of interventions, and the generation of evidence-based practices.[4] By aligning research projects with the needs of patients and healthcare providers, teaching hospitals contribute to the development of practical findings that have direct implications for patient care, ensuring that healthcare practices are grounded in the best available evidence. This integration of research and clinical care promotes a culture of inquiry, fosters innovation, and facilitates the translation of research findings into clinical practice.[3]

Conclusion: Effective clinical care, encompassing patient-centered care and evidence-based medicine, is indispensable for the advancement of training and research in teaching hospitals. By prioritizing high-quality and patient-centered care, teaching hospitals can enhance the training experiences of healthcare professionals, improve patient outcomes, and foster innovation in medical research. Integrating principles of effective clinical care into training and research frameworks is essential for promoting excellence in healthcare education and research in teaching hospitals, ultimately leading to improved patient care and outcomes.

Keywords: Clinical care; Patient-centered care; Evidence-based medicine; Teaching hospitals

Figure 2 Contributions of patient-oriented research and patient-centered medicine to the integration of clinical research and medical care. Abbreviations: CR = clinical research; MC = medical care; PRO = patient-reported outcomes; EHR = electronic health records.
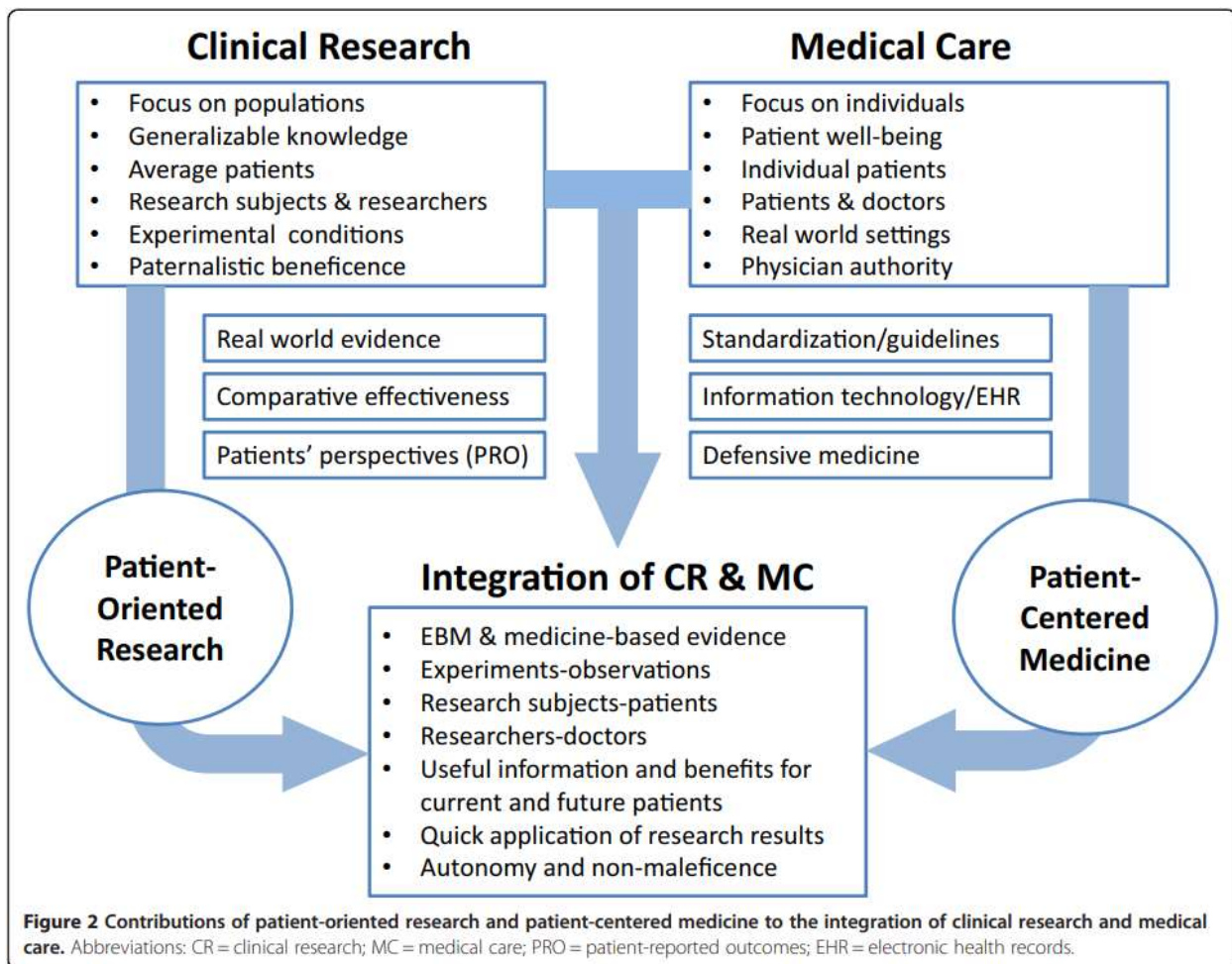
Source: Laine C, Davidoff F. Patient-centered medicine. A professional evolution

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CMS-2023_018
Role of Male Involvement in Labour: Determinants of Knowledge and Attitude among Adults in Benin City

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ABSTRACT

Background: Globally, it is estimated that 287,000 women die annually from causes related to pregnancy and 99% of these deaths occur in developing countries.[1] Men have been identified as crucial in reducing poor pregnancy outcomes. Hence, the increased recognition of the role that men can play during pregnancy & childbirth.[2] Several studies have shown poor knowledge and attitude of men on the role (such as identifying skilled birth attendants, accompanying the partner to the delivery room, and providing moral support) they should play when their spouse is in labour.[3-4] Thus, this study assessed the male involvement in labour; determinants of knowledge and attitude among adults in Evbuomore Community, Benin City with a view to improve maternal and child health outcomes.

Methods: This descriptive cross-sectional study was conducted from March 2022-May 2023 among 597 adult males selected using multi-stage sampling technique, in Evbuomore Community, Benin City, Edo State. The minimum sample size was calculated with the Cochran formula for single proportion using prevalence of 62.9% from a study done in 2020, in Oyo State. A p value<0.05 was considered statistically significant. Bi-variate analysis was done using Chi squared test. Logistic regression was done to identify determinants of knowledge and attitude of the respondents and results obtained were then presented using prose and frequency tables. Ethical approval was obtained from the Health Research Ethics Committee of the University of Benin Teaching Hospital (ADM/E/22/A/VOL.VII/14831248. Written informed consent was obtained from the respondents. Confidentiality was ensured.

Results: The mean age (SD) of the respondents was 40.7 (7.9) years. Majority of respondents, 504 (90.5%) had good knowledge of the role they should play when their spouses are in labour while 57 (9.5%) had poor knowledge. Five hundred and eighty-two (97.5%) of them had a positive attitude while 15 (2.5%) had a negative attitude toward the role they should play when their spouse is in labour. The significant factors affecting the good knowledge of the respondents were religion (p=0.005), occupation (p=0.01), educational status (p=0.011) and marriage type (p=0.025). The attitude of the respondents was positively influenced by religion (p=0.014) and occupation (p< 0.01.
The logistic regression analysis revealed that the determinants of good knowledge were occupation and educational status {skill level 0, p<0.01; 95%CI = 0.024- <0.01, O.R=<0.01) and skill level 2 (p<0.01; 95%CI = 0.102-0.466, OR=0.218)} and {secondary school (p =0.013; 95%CI = 1.199-4.636, OR=2.358)}. The determinant of good attitude was occupation {skill level 0, p<0.01; 95% CI = <0.01-1.27, OR=0.01}.

Conclusion: Majority of the respondents had good knowledge, and attitude towards the role they should play when their spouses are in labour. The determinants of good knowledge and attitude of the respondents in this study were education, and occupational status. Regular community-based health education programs that emphasize the importance of male participation when spouse is in labour should be done by health workers to sustain the good knowledge and attitude of respondents.

Keywords: Knowledge; Attitude; Role; Spouse; Labour.

Table 1: Logistic regression model for determinants of knowledge of male involvement in spouses' labour

Factors	B (regression co-efficient)	Odds ratio	95% CI		p-value
			Lower	Upper	
Age (years)	0.019	1.019	0.984	1.056	0.289
Religion					
Christianity	1.730	5.641	0.421	75.503	0.191
Islam	1.326	3.767	0.239	59.439	0.346
*ATR					
Occupation					
Skill level 0	16.994	<0.01	0.024	<0.01	<0.01
Skill level 1	-0.885	0.413	0.042	4.025	0.446
Skill level 2	-1.521	0.218	0.102	0.466	<0.01
Skill level 3	0.126	1.134	0.240	5.359	0.874
*Skill level 4					
Educational status					
None	18.509	0.034	<0.01	<0.01	0.998
Primary	-0.903	0.405	0.098	1.675	0.212
Secondary	0.858	2.358	1.199	4.636	0.013
*Tertiary					
Marriage Type					
Monogamy	0.862	0.344	2.367	0.397	14.117
*Polygamy					

*Reference category, Coefficient of determination - 9.1% to 19.5%

Table 2: Logistic regression model for determinants of attitude of male involvement in spouses' labour

Factors	B (regression co-efficient)	Odds ratio	95% ci for or		P-value
			Lower	Upper	
Age (years)	0.018	1.018	0.935	1.108	0.681
Religion					
Christianity	2.281	9.787	0.502	190.672	0.132
Islam	2.094	8.120	0.299	220.280	0.214
*ATR					
Number of Children	0.029	1.030	0.620	1.710	0.910
Occupation					
Skill level 0	16.292	0.01	0.00	1.267	<0.01
Skill level 1	-1.595	0.203	0.018	2.352	0.202
Skill level 2	-0.127	0.881	0.263	2.944	0.836
Skill level 3	16.473	1.497	<0.01	<0.01	0.996
*Skill level 4					
Educational status					
None	16.695	0.177	<0.01		0.998
Primary	-0.127	0.881	0.058	13.468	0.927
Secondary	0.848	2.336	0.540	10.105	0.256
*Tertiary					
Marriage Type					
Monogamy	1.028	2.795	0.161	48.650	0.481
*Polygamy					

*Reference category, Coefficient of determination- 2.6% to 12.4%

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Factors associated with Perception of COVID-19 Vaccine among Adult Residents in Benin City, Edo State

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ABSTRACT

Background: The global coronavirus 2019 (COVID-19) is a new strain of coronavirus SARS-CoV-2 which has been a cause of severe acute respiratory syndrome (SARS) on a global scale. Vaccination is considered a crucial measure for controlling the spread of the virus and this subsequently led to the development of several vaccines. Despite the efforts made to achieve successful COVID-19 vaccine use, a major hindrance was related to vaccine hesitancy which may be attributable to the perception of the COVID-19 vaccine among individuals. The objective of this study was to determine the perception of the COVID-19 vaccine and its associated factors among adult residents in Benin City.

Methods: A descriptive cross-sectional study design was carried out between June and August 2022 among adult residents (18 years and above) in Benin City. Six hundred and ten adult residents were selected from three Local Government Areas (Egor, Oredo, Ikpoba-Okha) using a multi-stage sampling technique. Ethical approval was obtained from the Ethics and Research Committee of University of Benin Teaching Hospital and permission from the Local Government authorities. Verbal informed consent was obtained from each respondent while assuring them of confidentiality. Data was collected using a pre-tested structured interviewer-administered questionnaire and analyzed with IBM SPSS version 25. Perception of COVID-19 vaccine was assessed under three domains (perceived benefits perceived barriers and cues to action) using 15 questions in a 3-point Likert scale. The maximum score obtainable was 75 and the minimum score was 15. Responses were computed into percentages. Respondents scoring 50% and above had good perceptions while respondents scoring below 50% had poor perceptions. Univariate and bivariate analysis were done and the level of significance of all statistical associations was set at $p<0.05$.

Results: The mean age (SD) of the respondents was 33.8±13.4 years and 328 (53.8%) of them were males. Four hundred and three (66.1%) respondents agreed that vaccination decreases their chance of getting COVID-19, 379 (62.1%) agree that getting the vaccine will protect them and others around them and 341 (55.9%) agreed that it is safe to take the COVID-19 vaccine.

Two hundred and eighty-six (46.9%) of them were not sure of the effectiveness of the vaccine, 259 (46.7%) doubted the safety of the vaccine because of the speedy development, 241 (40.8%) were afraid of the side effects and 63 (10.3%) believed that COVID-19 does not exist. Two hundred and eighty-five (46.7%) will take the vaccine if exposed to the virus, 284 (46.6%) will take the vaccine if family or close friends get infected with COVID-19 and 280 (45.9%) will accept the vaccine if the government makes it compulsory. Overall, 387 (63.4%) of the respondents had good perception of the COVID-19 vaccine. Factors significantly associated with good perception were higher education (p=0.010) and good knowledge of COVID-19 (p<0.001)

Conclusion: The study showed that about two-thirds of the respondents had a good perception of the COVID-19 Vaccine and were willing to take up the vaccine if offered. The major factors associated with the perception of COVID-19 vaccine were the level of education and a good knowledge of COVID-19. The government should provide accurate, up-to-date information about the safety and efficacy of COVID-19 vaccines.

Keywords: Perception; Knowledge; Factors; Vaccine hesitancy, Benin City.

Table 1: Respondents' perception of COVID-19 vaccine

Variable	Agree n (%)	Undecided n (%)	Disagree n (%)
Perceived Benefits			
Vaccination decrease my chances of getting the COVID-19 or its complications	403 (66.1)	121 (19.8)	86 (14.1)
Vaccination is a good idea because it makes me less worried about getting the COVID-19 vaccine	384 (63.0)	142 (23.3)	84 (13.8)
Getting the vaccine will protect me and others around me	379 (62.1)	157 (25.7)	74 (12.1)
It is safe to take the COVID-19 vaccine	341 (55.9)	200 (32.8)	69 (11.3)
COVID-19 vaccine is effective and likely to work for everybody	285 (46.7)	213 (34.9)	112 (18.4)
Perceived Barriers			
I am not sure of the effectiveness of the vaccine	286 (46.9)	185 (30.3)	139 (22.8)
The speed with which the vaccines were developed makes me doubt their safety	259 (42.5)	193 (31.6)	158 (25.9)
I am afraid of the side effects of COVID-19 vaccine	249 (40.8)	156 (25.6)	205 (33.6)
The vaccine center is far from where I live	147 (24.1)	138 (22.6)	325 (53.3)
I think COVID-19 is merely a political issue	117 (19.2)	192 (31.5)	301 (49.3)
I do not believe COVID-19 exists	63 (10.3)	109 (17.9)	438 (71.8)
Cues to action			
If I get exposed to someone with COVID-19, I will take the vaccine	285 (46.7)	164 (26.9)	161 (26.4)
If family or close friends get infected with the virus, I will take it	284 (46.6)	161 (26.4)	165 (27.0)
I will accept to take the vaccine if the government makes it compulsory	280 (45.9)	160 (26.2)	170 (27.9)
I will take the vaccine if my religious leader recommends it	202 (33.1)	172 (28.2)	236 (38.7)

n=610

Table 2: Association between perception of COVID-19 vaccine and socio-demographic characteristics of respondents

Variable	Perception of COVID-19 vaccine		Test statistic	p-value
	Good (n=387) n (%)	Poor (n=223) n (%)		
Age group (years)				
<45	293 (65.4)	155 (34.6)	2.792[a]	0.095
≥45	94 (58.0)	68 (42.0)		
Sex				
Male	217 (66.2)	111 (33.8)	2.256[a]	0.152
Female	170 (60.3)	112 (39.7)		
Family type				
Monogamous	333 (63.8)	189 (36.2)	0.192[a]	0.720
Polygamous	54 (61.4)	34 (38.6)		
Household size				
1 – 5	205 (63.1)	120 (36.9)	0.040[a]	0.866
6 – 10	182 (63.9)	103 (36.1)		
Religion				
Christian	341 (64.0)	192 (36.0)	1.576[b]	0.444
Muslim	45 (60.8)	29 (39.2)		
Traditional religion	1 (33.3)	2 (66.7)		
Level of Education				
NFE/Primary	15 (48.4)	16 (51.6)	11.069[a]	**0.010***
Secondary	108 (60.0)	72 (40.0)		
Tertiary	264 (66.2)	135 (33.8)		
Employment status				
Employed	166 (59.9)	111 (40.1)	2.703[a]	0.109
Unemployed	221 (66.4)	112 (33.6)		
Average monthly income (₦)				
<30,000	10 (50.0)	10 (50.0)	0.885[a]	0.347
≥30,000	156 (60.7)	101 (39.3)		
Perception of current health status				
Good	329 (64.8)	179 (35.2)	2.286[a]	0.131
Poor	58 (56.9)	44 (43.1)		
Knowledge of COVID-19				
Good	310 (68.4)	143 (31.6)	18.897[a]	**<0.001[a]**
Poor	77 (49.0)	80 (51.0)		
Perception of risk COVID-19				
Good	124 (66.3)	63 (33.7)	0.956[a]	0.362[a]
Poor	263 (62.2)	160 (37.8)		

*= Statistically significant [a] = Chi-square (x^2) [b] = Fisher's Exact test

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CMS-2023_020
Psychological Impact of Infertility: A Comparative Study of Women attending Infertility and Antenatal Clinics in University of Benin Teaching Hospital

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ABSTRACT

Background: Infertility poses various psychological challenges for individuals[1]. The distress stemming from the inability to conceive has been associated with emotional consequences like depression, anger, and marital difficulties, particularly for women experiencing infertility[2]. The objective of this study is to assess and compare the psychological effects encountered by infertile women attending the Human Reproductive Research Programme (HRRP) clinic with fertile women attending the antenatal clinic at the University of Benin Teaching Hospital, Edo State, Nigeria (a tertiary healthcare facility).

Methods: The study was done in the Obstetrics/Gynecology clinic of the University of Benin Teaching Hospital, Benin City. Its purpose was to compare factors impacting the mental well-being of 226 women, with 113 pregnant women attending the antenatal clinic and an equal number of respondents from the infertility clinic. Carried out from May 2021 to March 2023, the research employed a cross-sectional (comparative) design with a determined sample size using a comparative study formula[3]. Attendees in the HRRP clinic facing infertility problems and pregnant women in the antenatal clinic were included in the study. Inclusion criteria were no ongoing psychiatric treatment; those with other medical conditions, surgical issues, or using assisted reproductive technology were excluded. Eligible clients were studied on clinic days until sample size was gotten. Data collection used a pretested interviewer-administered questionnaire, capturing socio-demographics and the GHQ-28 assessed psychological well-being with four subscales and 28 items[4]. Developed by Goldberg, it measured the potential for psychological disorders using binary (0-0-1-1) scoring, its reliability was established through test-retest and inter-rater/intra-rater reliability tests[5]. SPSS-25 software analyzed scores descriptively, involving frequencies, percentages, means, and standard deviations. Bivariate analysis, including chi-square tests, compared psychological well-being between infertility and pregnancy groups with a significance level of 0.05. Ethical approval was obtained, participants granted consent, and confidentiality was ensured.

Results: The average age (SD) of women in the HRRP unit was notably higher at 41.8(8.3) years, when compared to that of antenatal unit at 31.2(6.4) years (p-value = 0.001). A significant portion of antenatal (79.6%) and HRRP clinic (87.6%) attendees had tertiary education. For marital duration, most antenatal clinic attendees (56.6%) were married under 5 years, HRRP clinic (42.5%) for 6-10 years (Table 1a). In the HRRP clinic, 29.2% showed somatic symptoms; ANC clinic reported 0.9%, significant (p<0.0001). HRRP clinic had 66.4% for anxiety/insomnia; ANC clinic had 8.0%, significant (p < 0.0001). Social dysfunction appeared in 3.5% at ANC clinic, 20.4% at HRRP clinic; significant (p < 0.0001). Severe depression was in 39.8% in HRRP clinic, ANC clinic 3.5%, significant (p < 0.0001). ANC clinic: 86.7% had good psychological health assessments, HRRP clinic: 72.6% poor, significant (p < 0.0001) (Table 2).

Conclusion: At the end of the study, a correlation was seen between infertility and increased levels of psychological distress. In a bid to reduce stress and enhance care quality for women facing fertility challenges, the inclusion of mental health services within infertility units is paramount. Therefore, age, marriage duration, pregnancy history, and number of children influence the psychological well-being of women attending both clinics.

Keywords: Infertility clinic; Antenatal clinic; Psychological health

Table 1: Socio-demographic Characteristics of the Respondents

Variables	Total Population		(x^2)	p-value
	ANC (n = 113) Freq (%)	HRRP (n = 113) Freq (%)		
Age group				
11 – 20	6 (5.3)	0 (0.0)	7.933	0.001
21 – 30	47(41.6)	12 (10.6)		
31 – 40	50 (44.2)	42 (37.2)		
41 – 50	10 (8.8)	42 (37.2)		
51 – 60	0 (0.0)	17 (15.0)		
Mean age (±SD)	31.2(±6.4)	41.8(±8.3)		
Occupation				
Level 0-1	11 (9.7)	3 (2.7)	2.099	0.033
Level 2-3	55 (48.7)	57 (50.4)		
Level 4	47 (41.6)	53 (46.9)		
Education				
Primary	4 (3.5)	0 (0.0)	2.012	0.075
Secondary	19 (16.8)	14 (12.4)		
Tertiary	90 (79.6)	99 (87.6)		
Marriage duration				
<5 years	64 (56.6)	26 (23.0)	5.467	0.001
6 - 10yrs	33 (29.2)	48 (42.5)		
11 - 15yrs	15 (13.3)	23 (20.4)		
16 - 19yrs	1 (0.9)	7 (6.2)		
20yr above	0 (0.0)	9 (8.0)		
Religion				
Christianity	94 (83.2)	96 (85.0)	Exact 0.268	0.914
Islam	15 (13.3)	14 (12.4)		
ATR	4 (3.5)	3 (2.7)		
Family type				
Monogamy	102 (90.3)	101 (89.4)	0.048	0.826
Polygamy	11 (9.7)	12 (10.6)		
Pregnant before				
Yes	97 (85.8)	78 (69.0)	9.141	0.002
No	16 (14.2)	35 (31.0)		
Have children				
Yes	83(73.5)	13(11.5)	9.399	0.001
No	30(26.5)	100(88.5)		
Number of children				
0	30(26.5)	100(88.5)		
1-3	80(70.8)	13(11.5)	96.346	0.001
4-6	3(2.7)	0(0.0)		

Table 2: Psychological Health of Respondents in both clinics.

Variables	Clinic				(x^2)	p-value
	ANC n =113 Freq(%)		HRRP (Fertility clinic) n =113 Freq(%)			
	Presence	Absence	Presence	Absence		
Somatic symptoms	1(0.9)	112 (99.1)	33(29.2)	80 (70.8)	35.451	<0.0001
Anxiety/insomnia	9(8.0)	104 (92.0)	75(66.4)	38 (33.6)	82.533	<0.0001
Social dysfunction	4(3.5)	109 (96.5)	23(20.4)	23 (20.4)	15.184	<0.0001
Severe depression	4(3.5)	109 (96.5)	45(39.8)	68 (60.2)	43.803	<0.0001
General Psychological health assessment						
Good	98(86.7)		31(27.4)			
Poor	15(13.3)		82(72.6)		84.656	<0.0001

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CMS-2023_021
Knowledge Attitude and Acceptability of Cervical Cancer Screening among University of Benin Female Lecturers

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ABSTRACT

Background: Cervical cancer is a disease of public health interest because it is easily preventable. It is the fourth most common cancer in women and the second most common gynecological cancer worldwide.[1] Persistent oncogenic HPV infection is the strongest risk factor for the development of cervical cancer, as it is responsible for virtually all cases of cervical cancer.[2] Fortunately, screening for premalignant lesions can help prevent this cancer.[3] However, about 40% of Nigeria's population live below the poverty line of 1 dollar per day. Nigeria's healthcare system that is largely dependent on out-of-pocket expenditure makes the cost of screening unaffordable to most women in the population.[4]

Methods: This study was a descriptive cross-sectional survey of 370 female lecturers in the University of Benin, Benin City, Edo State, Nigeria, carried out using a self-administered structured questionnaire. p was taken as the prevalence (37.5%) of female lecturers at the University of Maiduguri who had screened for cervical cancer.[5] A minimum sample size of 360 was derived using the Cochran formula for descriptive study. Respondents were selected using multi-stage sampling technique. Data collected was analyzed using the Statistical Package for the Social Sciences (SPSS) version 25.0 software. Chi-squared test was used to determine association between respondents' socio-demographic characteristics and their level of acceptability of cervical cancer screening as well as their knowledge of cervical cancer and cervical cancer screening. Statistical significance set at $p < 0.05$.

Results: Three hundred and seventy respondents participated in this study with a mean age of 41.1 ± 7.2 years. Only 46.8% of the respondents had good overall knowledge of cervical cancer and cervical cancer screening and only 36.8% of female lecturers had screened for cervical cancer. 96.2% of respondents had very satisfactory attitude towards cervical cancer screening, and 78.4% had good level of acceptability of cervical cancer screening.

Conclusion: Only about half of the respondents had good overall knowledge about cervical cancer and its screening. There was poor uptake of cervical cancer screening despite good attitude towards and good acceptability of cervical cancer screening.

Keywords: Cervical cancer, Knowledge of cervical cancer, Uptake of cervical cancer screening, Attitude towards cervical cancer screening.

Table 1: Knowledge, attitude, acceptability and uptake of cervical cancer screening

Variables	Frequency (n = 370)	Percent
Knowledge of cervical cancer screening among respondents		
Good	173	46.8
Poor	197	53.2
Attitude of respondents towards cervical cancer screening		
Very satisfactory	356	96.2
Satisfactory	14	3.8
Unsatisfactory	0	0.0
Acceptability of cervical cancer screening among respondents		
Good	290	78.4
Poor	80	21.6
Screened for cervical cancer		
Yes	136	36.8
No	234	63.2

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CMS-2023_022

Impact of Socio-demographic Characteristics on Coping with Stress among Clinical Staff of the Emergency Department of the University Of Benin Teaching Hospital, Benin City

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ABSTRACT

Background: Stress is normally an unavoidable part of everyone's life. It can negatively impact one's mental and physical health as well as work. The World Health Organization (WHO) defines work-related stress as "the response people may have when presented with work demands and pressures not matching their knowledge and abilities, and which challenges their ability to cope.[1] Stress can also be defined as a particular relationship between the person and the environment that is assessed by the person as exceeding his/her resources and endangering well-being.[2] Individuals would have tp find ways to cope with stress. This study aimed at evaluating the possible impact of socio-demographic characteristics on the ability to cope with stress among the clinical staff working at the Emergency Department of the University of Benin Teaching Hospital (UBTH), Benin City, Edo State, Nigeria.

Methods: A descriptive cross- sectional study design was utilized for the study in October 2022 among clinical staff of UBTH Emergency Department. All clinical staff (Doctors, paramedics, nurses and laboratory scientist) were administered the structured instruments by a convenient sampling method. Instrument used was the Work Stress Questionnaire by Kristina Holmgren, 2008.Calculated sample size was 81.Data analysis was done using SPSS and summarized by descriptive statistics.

Results: Work-related stress had a negative impact on service delivery of the majority of respondents 43(56.6%). The association between age range and the effects of work-related stress was statistically significant. The survey shows that 48(63.2%) of female respondents and nurses 27(35.5%) had negative of work-related stress compared to other groups, but the association was not statistically significant. (Table 1)
Majority 37(59.7%) of respondent aged 21 – 30 had good stress reduction and coping strategies. Most 38(61.3%) of female respondents had good stress reduction and coping strategies. The survey also showed that 25(40.3%) of nurses' had good stress reduction and coping strategies. The higher population 57(91.9%) of responders with negative effects of work-related stress had good stress reduction and coping strategies. These factors (age group, gender and clinical section) did not show a statistically significant relationship with the knowledge of coping with stress. (Table 2)

Conclusion: Age group was the only socio-demographic characteristic that had a statistically significant relationship with work-related stress.

Keywords: Socio-demographic characteristics, Coping, Stress.

Table 1: Association between Sociodemographic characteristics and Work stress

Variables	Positive	Negative	Chi square	p
	n = 5(%)	n = 76(%)	(x2)	
Age group (years)				
21 - 30	3 (60.0)	43 (56.6)	7.915	0.023
31 – 40	0 (0)	28 (36.8)		
41 - 50	2(40.0)	5 (6.6)		
Sex				
male	2 (40.0)	28 (36.8)	0.020	1.000
female	3 (60.0)	48 (63.2)		
Clinical section				
doctors	1 (20.0)	18 (23.7)		
nurses	3 (60.0)	27 (35.5)	1.993	0.624
paramedics	0 (0.0)	18 (23.7)		
lab scientists	1 (20.0)	13 (17.1)		

Table 2: Relationship of socio-demographic factors and knowledge of stress reduction and coping strategies amongst clinical staff in emergency department of UBTH

Variables	Good	Poor	Chi square	p
	n = 62(%)	n = 19(%)	(x2)	
Age group (years)				
21 - 30	37 (59.7)	9 (47.7)	0.638	0.611
31 – 40	20 (32.3)	8 (42.1)		
41 - 50	5 (8.1)	2 (10.5)		
Sex				
male	24 (38.7)	6 (31.6)	0.317	0.603
female	38 (61.3)	13 (68.4)		
Clinical section				
doctors	16 (25.8)	3 (15.8)		
nurses	25 (40.3)	5 (26.3)	4.514	0.221
paramedics	13 (21.0)	5 (26.3)		
laboratory scientists	8 (12.9)	6 (31.6)		
Effects of work-related stress				
positive effects	5 (8.1)	0 (0.0)	1.633	0.334
negative effects	57 (91.9)	19 (100.0)		

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CMS-2023_023

Assessment of Course Satisfaction and its associated Factors among Undergraduate Medical Students in the University of Benin, Benin City, Edo State

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ABSTRACT

Background: In university education, students' course satisfaction is an important indicator of the quality of education programmes.[1] Course satisfaction has a strong influence on psychological health, well-being and productivity.[2] It is a multidimensional process with different influencing factors. These factors can be grouped into- personal and institutional factors. The personal factors include- age, gender, preferred learning style and students' Grade Point Average (GPA) while institutional factors include- quality of instructions, promptness of feedback, clarity of expectation, lecturer-student relationship and teaching style.[3] There are contrasting studies regarding the proportion of medical students who were satisfied with their course in Nigeria and Pakistan,[4-5] indicating that course satisfaction can vary between countries.

Methods: This descriptive cross-sectional study was carried out in the School of Medicine, College of Medicine, University of Benin, Benin City, Edo State, Nigeria between December, 2021 and February, 2023. Six hundred and eleven undergraduate medical students in Year 2 to Year 6 were selected using stratified sampling technique. The data required for the study was collected with the aid of a semi-structured self-administered questionnaire consisting of both open-ended and closed-ended questions. It was analysed using IBM SPSS Statistics Version 25 software. Tests of significance using appropriate tests of association was adopted and used at 95% confidence interval and p-value = <0.05 was accepted as statistically significant.

Results: The mean age of the respondents was 22.9 (SD ± 3.1) years. Three hundred and thirty two respondents (54.3%) were satisfied/very satisfied with their medical education, 181 (29.6%) were dissatisfied/very dissatisfied while 98 (16.0%) were undecided about their level of course satisfaction. The significant factors affecting course satisfaction were current year of study, current posting and self-reported academic performance (p-values = 0.022, 0.001 and 0.001 respectively). Fifty six percent of the students were willing to study medicine again if given a second chance. Among the students who were satisfied with the course, 221 (66.6%) were willing to study medicine again and 276 (83.1%) were willing to practice medicine after graduation. Seventy six (42.0%) dissatisfied undergraduate medical students were willing to study medicine again. Therefore, the presence of course satisfaction is a positive predictor for willingness to study medicine again if given a second chance as well as willingness to practice medicine after graduation (p-values = 0.000 and 0.000 respectively). The reasons given for course satisfaction were adequate knowledge gained, good learning environment, love for medicine, interactive lectures and postings, competent and friendly lecturers, satisfactory academic performance, high expected remuneration and affordable education.

Conclusion: A larger proportion of the students were satisfied with the course. It is imperative to correct the identified causes of dissatisfaction through a collaborative effort involving the government, school authorities, lecturers and the students.

Keywords: Medical students; Satisfaction; Course

Table 1: Socio-Demographic, Socio-Economic and Academic Characteristics of Respondents and Course Satisfaction

Variable	Level of course satisfaction (n = 611)			Test statistic	p-value
	Satisfied/Very Satisfied Freq (%)	Undecided Freq (%)	Dissatisfied/Very Dissatisfied Freq (%)		
Age group (years)				Fisher's exact test = 10.828	0.165
≤ 20	62 (45.6)	30 (22.0)	44 (32.4)		
21-25	203 (56.1)	55 (15.2)	104 (28.7)		
26-30	62 (61.4)	11 (10.9)	28 (27.7)		
31-35	4 (44.4)	1 (11.2)	4 (44.4)		
>35	1 (33.3)	1 (33.3)	1 (33.3)		
Sex				$\chi^2 = 5.926$	0.052
Male	192 (58.9)	46 (14.1)	88 (27.0)		
Female	140 (49.1)	52 (18.2)	93 (32.7)		
Family level of income				$\chi^2 = 2.628$	0.269
Satisfactory	244 (56.4)	68 (15.7)	121 (27.9)		
Unsatisfactory	88 (49.4)	30 (16.9)	60 (33.7)		
Current year of study				$\chi^2 = 17.931$	0.022
200 level	66 (56.4)	21 (18.0)	30 (25.6)		
300 level	62 (53.0)	26 (22.2)	29 (24.8)		
400 level	115 (52.0)	40 (18.1)	66 (29.9)		
500 level	55 (61.8)	6 (6.7)	28 (31.5)		
600 level	34 (50.7)	5 (7.5)	28 (41.8)		
Current Posting				$\chi^2 = 29.026$	0.001
Preclinical	128 (54.7)	47 (20.1)	59 (25.2)		
Block Posting	65 (47.8)	21 (15.4)	50 (36.8)		
Introductory Posting	50 (58.8)	19 (22.4)	16 (18.8)		
Senior Posting	34 (50.7)	5 (7.5)	28 (41.8)		
Subspecialty Posting	33 (70.2)	3 (6.4)	11 (23.4)		
Junior Posting	22 (52.4)	3 (7.1)	17 (40.5)		
Self-reported academic performance				$\chi^2 = 14.268$	0.001
Satisfactory	270 (58.6)	70 (15.2)	121 (26.2)		
Unsatisfactory	62 (41.3)	28 (18.7)	60 (40.0)		

Table 2: Level of course satisfaction and willingness to study medicine again/willingness to practice medicine after graduation

Course Satisfaction	Willingness to study medicine again (n = 611)			Test statistics/ p-value
	Yes n (%)	No n (%)	Undecided n (%)	
Satisfied	221 (66.6)	47 (14.1)	64 (19.3)	x^2=52.653 <0.001
Undecided	46 (46.9)	15 (15.3)	37 (37.8)	
Dissatisfied	76 (42.0)	64 (35.4)	41 (22.6)	
Course Satisfaction	**Willingness to practice medicine after graduation (n = 611)**			
	Yes n (%)	No n (%)	Undecided n (%)	
Satisfied	276 (83.1)	43 (13.0)	13 (3.9)	Fisher's=21.509 <0.001
Undecided	66 (67.3)	3 (3.1)	29 (29.6)	
Dissatisfied	126 (69.6)	13 (7.2)	42 (23.2)	

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CMS-2023_024

Routine Childhood Immunization Knowledge: Do Fathers in Benin City who accompany their Children for Immunization differ from those who accompany their Children for Circumcision?

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ABSTRACT

Background: Paternal involvement in child care activities especially immunization is being advocated as their involvement portend better outcomes.[1] Compliance with circumcision, another child care activity, is much higher than for childhood immunization.[2] While male involvement in immunization in Nigeria is low,[3] an undocumented observation indicates that their involvement in circumcision seems to be more. This study aimed to determine if fathers in Benin City who accompany their children for immunization and male circumcision differ in terms of their knowledge about immunization and other characteristics such as age and level of education.

Methods: A cross-sectional questionnaire-based study was carried out between July 2018 and November 2019. Ethical clearance was obtained from University of Benin Teaching Hospital Ethics and Research Committee. Consecutive recruitment of Fathers who accompanied their children for immunization (FAI) at the immunization centre and fathers who accompanied their male infants for circumcision (FAC) at Accident and Emergency theatre was done. Information on biodata, mode and place of delivery, attendance at ANC was obtained using a pre-tested validated questionnaire. Statistical analysis was done using Chi square test and Fishers Exact Test as appropriate, with significance level set at $p<0.05$ at 95% confidence interval.

Results: There were 103 FAI and FAC each. Mean age of FAI (34.47±5.68 years) was significantly lower than for FAC (36.91±4.54 years), $p<0.0008$. FAC were significantly more educated ($p<0.0001$) and were significantly more likely to know the names of the vaccines administered ($p<0.0001$) and potential side effects/complications of vaccines ($p=0.027$).(See table 1) FAI were significantly more likely to know the age at commencement ($p=0.024$) and completion of immunization ($p=0.0031$) although a significant proportion of both groups were not knowledgeable about these dates. Just over half 107 (51.9%) of all the fathers agreed that immunization was more important than circumcision. Figure 1 shows that more FAI considered immunization more important than circumcision but almost all FAC felt immunization and circumcision were equally important.

Conclusion: Older and more educated fathers seemed more likely to accompany their babies for circumcision. Majority of fathers were not knowledgeable about immunization. All opportunities for contact with fathers especially when they accompany their children for health care activities should be used to educate them about immunization.

Keywords: Fathers; Childhood immunization knowledge; Circumcision

Table 1: Knowledge of fathers about immunization

Variable	FAI	FAC	Total	p-value
	n (%)	n (%)		
Immunization for every child				
Yes	101 (98.1)	101 (98.1)	202 (98.1)	
No	0 (0.0)	0 (0.0)	0 (0.0)	
Not specified	2 (1.9)	2 (1.9)	2 (1.9)	
Age at commencement				
Birth	63 (61.2)	53 (51.5)	116 (56.3)	
First week	14 (13.6)	30 (29.1)	44 (21.4)	0.024
Others/don't know	26 (25.2)	20 (19.4)	46 (22.3)	
Age at completion				
Correct	38 (36.9)	9 (18.4)	57 (27.7)	
Wrong	65(63.1)	84 (81.6)	148 (72.3)	0.0031
List four vaccines				
0	33 (31.1)	21 (19.4)	54 (26.2)	
1	49 (47.6)	24 (23.3)	73 (35.4)	
2	6 (5.8)	30 (29.1)	36 (17.5)	0.0001
3	11 (10.7)	18 (17.5)	29 (14.1)	
4	5 (4.8)	11 (10.7)	16 (7.8)	
List Complications				
Correct	27 (26.2)	43 (41.7)	70 (34.0)	
Wrong	77 (73.8)	60 (58.3)	136 (66.0)	0.027

FAI - Fathers accompanying children for immunization
FAC - Fathers accompanying children for circumcision
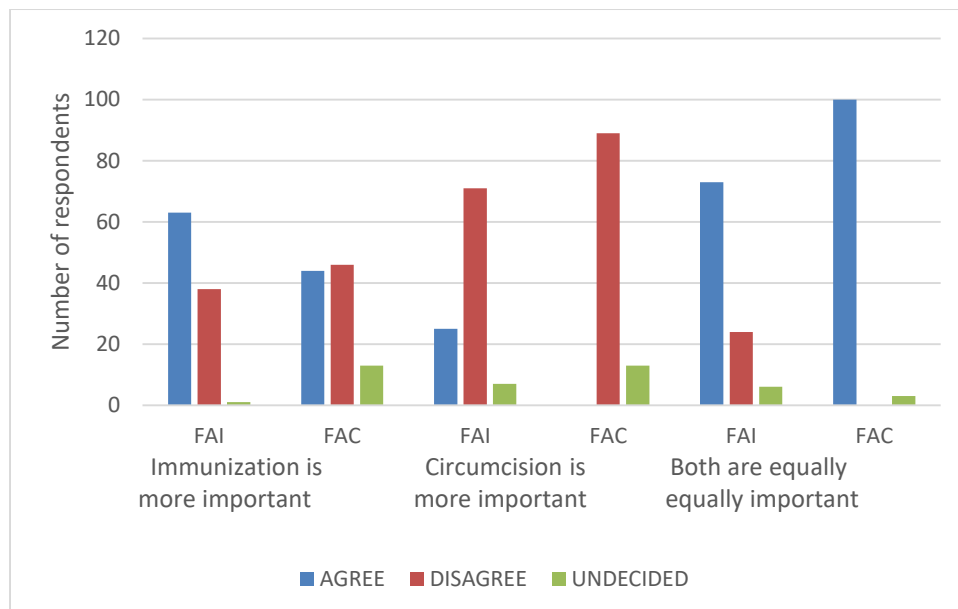
Figure 1: Responses of fathers to questions on importance of immunization and circumcision
FAI- Fathers accompanying children for immunization
FAC- Fathers accompanying children for circumcision

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CMS-2023_026

Clinical Evaluation of the Aesthetic Performance of Organically Modified Ceramics (Ormocers), Nanohybrid and Microhybrid Composite in Carious Permanent Posterior Teeth Restorations in a Nigerian Population

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ABSTRACT

Background: The demand for aesthetics in dentistry has continued to increase, especially with increasing awareness of tooth-colored restorative materials among dental patients. The search for a material that will meet the present-day demands for good aesthetics and functionality has continued to generate interest in dental material sciences. Resinous materials, especially composite resins, have no doubt been employed in meeting some of these demands.[1] Those who favour the use of amalgam for posterior teeth restoration have said it is due to its tolerance to a wide range of clinical placement conditions, moderate tolerance of the presence of moisture during placement, biocompatibility, durability or longevity, availability, and desirable mechanical properties (good compressive and flexural strength).[2,3] The aim of the present study, therefore, was to evaluate the clinical aesthetic performance of an ormocer, a nanohybrid, and a traditional microhybrid composite in carious permanent posterior teeth restorations.

Methods: This was a randomized clinical trial. Patients with at least 3 carious lesions that required replacement (GV Black's classification of Class I and/or Class II), each with an opposing tooth were enrolled in this study. A total of 105 restorations were placed, 35 for each material: an ormocer-based composite, a nanohybrid resin composite, and a micro-hybrid resin composite. One operator placed all the restorations according to the manufacturers' instructions with each restoration finished and polished one week after placement. The subjects were recalled at 1 month, 3 months, 6 months, and 12 months.
The questionnaires were screened for completeness by the researcher, coded and entered into the IBM SPSS Version 21.0 software, and analyzed. The level of all statistical associations was set at $p \leq 0.05$.

Results: There was a female-to-male ratio of 4.8:1. Subject recall rate was 100%. All ormocer, nanohybrid, and micro-hybrid resin composite restorations recorded 100% clinically excellent scores from baseline to 3 months for all parameters. The majority of the restorations maintained clinically excellent scores from 1 month to 12 months.
Figure 1 shows that the three study materials were fairly evenly distributed among the small and medium-sized cavities. Microhybrid restorations were slightly more (88.6%) compared to Nanohybrid (82.9%) and ORMOCER which had 80.0% placed in small cavities. More (20.0%) ORMOCER were placed in medium size cavities.
Table 1 shows that in twelve months of evaluation, of the three study materials, only one Ormocer restoration scored 2 at 12 months for the parameter surface luster and roughness. For colour stability, each of the study materials had at least one restoration scoring 2. Only Microhybrid restorations retained their aesthetic anatomic forms throughout the study duration.

Conclusion: The clinical performance of Ormocer admira (voco), Tetric EvoCeram (Ivoclar Vivadent) a Nanohybrid, and tetric Ceram (Excite) a micro-hybrid was satisfactory in the restorations of carious posterior permanent teeth restorations.

Keywords: Ormocer; Nanohybrid composite; Clinical evaluation; Posterior teeth; Aesthetic
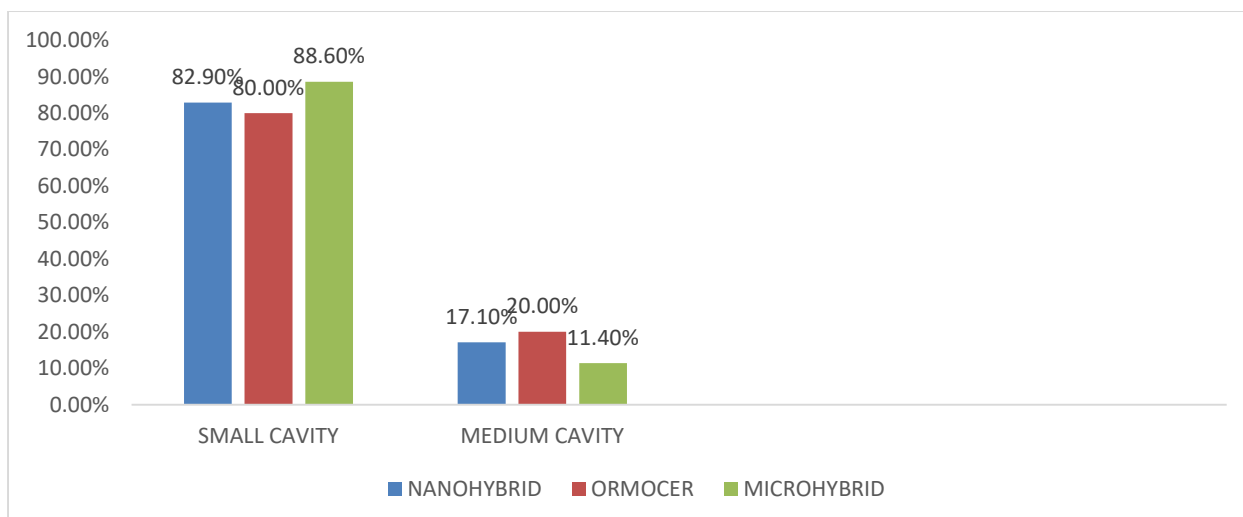
Fig 1 depicts the cavity sizes and the test materials used

Table 1: Summary of clinical performance of aesthetic parameters of the study materials

Parameters	score	Nanohybrid		Ormocer		Microhybrid	
		6mths n(%)	12mths n(%)	6mths n(%)	12mths n(%)	6mths n(%)	12mths n(%)
Surface luster and Roughness	1	35 (100.0)	35 (100.0)	35(100.0)	34 (97.1)	35(100.0)	35(100.0)
	2	0 (0.0)	0(0.0)	0(0.0)	1(2.9)	0(0.0)	0(0.0)
Surface and marginal staining	1	35(100.0)	35(100.0)	35(100.0)	35(100.0)	35(100.0)	35(100.0)
	2	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)
Colour stability	1	33 (94.3)	33 (94.3)	34(97.1)	33(94.3)	32 (91.4)	32 (91.4)
	2	2 (5.7)	2 (5.7)	1(2.9)	2 (5.7)	3 (8.6)	3 (8.6)
Aesthetic anatomic form	1	33 (94.3)	32 (91.4)	34(97.1)	34(97.1)	35(100.0)	35(100.0)
	2	2 (5.7)	3 (8.6)	1(2.9)	1(2.9)	0(0.0)	0(0.0)

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CMS-2023_027
Knowledge and Practice of Antibiotics Stewardship among Nigerian Dentists Practicing in a Tertiary Health Facility

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ABSTRACT

Background: The irrational use of antibiotics is a worldwide phenomenon that should be strongly condemned and discouraged. One of the most serious consequences of irrational antibiotic use is antibiotic resistance.[1] Resistance to antibiotic use is a universal public health concern because it adversely affects treatment results, prolongs morbidity, increases hospital stay, elevates the risk of mortality, and increases medical costs. In light of the increasing cases of antibiotic resistance in clinical practice, the Antibiotic Stewardship Program (ASP) was proposed to provide a solution to the inappropriate use of antibiotics in clinical practice. ASP is a coherent set of actions that promotes the use of antimicrobials in a responsible manner. Antibiotic resistance is also a common occurrence in the field of dental clinical practice.[2,3] The aim of this study was to assess the knowledge and practice of antibiotic stewardship among Dentists practicing in a tertiary health facility.

Methods: This was a descriptive cross-sectional survey conducted among dental practitioners practicing at the University of Benin Teaching Hospital (UBTH). Standard, self-administered, structured closed-ended questionnaires designed in English were distributed only to eligible participants. The first section of the questionnaire included questions regarding the demographic variables of the respondents. The second section consisted of twelve (12) questions on knowledge of antibiotic stewardship while the third section consisted of ten (10) questions regarding the practice of antibiotic stewardship. Data collected were entered and analyzed using Statistical Package for Social Sciences (SPSS) software version 25.0. The level of significant association was set at p-value ≤0.05.

Results: Of the 110 questionnaires distributed, 83 were filled and returned representing a response rate of 75.5%. The participants were aged between 23 years and 54 years with a mean age of 34.97±6.92 years. There were more males 49 (59.0%) than females, 34 (41.0%). The majority of the respondents were from the oral surgery specialty, 20(24.1%) while the registrar cadre recorded the highest number of participants, 41(49.4%) and most of the respondents, 33(39.8%) had practiced for only 0-5 years. Table 1 depicts the grading of the respondents' knowledge. Slightly more than half 52 (62.7%) of the respondents, recorded excellent knowledge while 26(31.3%) had good knowledge. The practice grade shows that the majority, 66(79.5%) of the respondents possessed good practice. (Table 2)

Conclusion: The study revealed excellent knowledge and good practice of antibiotic stewardship among dentists who participated in this study. It can be observed that many of the participants were not aware of antibiotic stewardship. It is expected that antibiotic resistance will be minimized by good knowledge and practice of antibiotic stewardship as reported in the present study.

Keywords: Knowledge; Practice; Antibiotic stewardship; Tertiary

Table 1: Grading of respondents' knowledge

Grading of knowledge	Frequency	Percent
Weak knowledge	2	2.4
Moderate knowledge	3	3.6
Good knowledge	26	31.3
Excellent knowledge	52	62.7
Total	83	100.0

Table 2: Practice grading of respondents

Grading of practice	Frequency	Percent
Weak practice	3	3.6
Fair practice	14	16.9
Good practice	66	79.5
Total	83	100.0

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CMS-2023_028
COVID-19 related Publications from a Southern Nigerian Tertiary Hospital

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ABSTRACT

Background: Research plays a pivotal role in patient-centered care and outbreak response by enabling understanding of disease dynamics and generating evidence-based mitigation strategies for outbreak management.[1] Knowledge generated from well-designed research conducted during outbreaks also ccontributes immensely to future preparedness and response capabilities.[2] During the coronavirus disease 2019 (COVID-19) pandemic, the unprecedented surge in scientific contributions from around the globe has been evaluated through bibliometric analysis of peer-reviewed publications.[3-5] The University of Benin Teaching Hospital (UBTH) is an academic tertiary hospital which served as a center for COVID-19 diagnosis, treatment, and public health surveillance. Research is consistently prioritized in the hospital's strategic plan, reflecting a commitment to advancing knowledge and healthcare practice. This study aimed to document COVID-19 related scientific contributions originating from UBTH.

Methods: We conducted an exhaustive online search across multiple databases, including PUBMED, African Journal Online, and Google Scholar, using the search terms 'COVID-19 OR SARS-CoV-2' AND 'University of Benin Teaching Hospital' for the period spanning January 2020 to May 2023 when COVID-19 ceased to be a Public Health Emergency of International Concern. Additionally, we explored local medical journals namely the Annals of Medical and Surgical Practice, Journal of Hospital Practice and Administration, Annals of Biomedical Sciences, Journal of Biomedical Research, and Journal of Basic Medical Sciences, within the specified timeframe. Our inclusion criteria encompassed COVID-19 related peer-reviewed articles that were indexed in the aforementioned databases or local journals, with at least one author affiliated with the University of Benin Teaching Hospital. We excluded non-peer-reviewed articles, including preprints, and any duplicated studies. Data, including article title, journal name, author name, departmental affiliation, article type, and funding source, were extracted and entered into Microsoft Excel spreadsheet. Categorical variables were analyzed, and the results were presented as frequencies and percentages.

Results: A total of 75 COVID-19 related publications authored by 94 UBTH staff members were identified (Table 1). Publications comprised mostly original research articles 58 (77.3%); 55 (73.3%) were observational studies. Most articles, 50 (66.7%) were published in international journals. External collaborators co-authored 43 (57.3%) of the publications, while 8 articles (10.7%) declared external funding sources. The number of articles by individual authors ranged from 1 to 17, with an average of 2.3 publications per author. Majority were medical (68.1%) or dental (16.0%) practitioners (Table 2).

Conclusion: UBTH made significant contributions during the COVID 19 pandemic with diverse cadres of healthcare professionals from various departments actively engaged in COVID-19 related research and scientific publications. Our findings can serve as a valuable guide for the hospital management in enhancing research capacity, targeting competency in clinical trials, grantsmanship capabilities, offering mentorship to non-medical/dental practitioners, and fostering external networks.

Keywords: COVID-19; Research; UBTH; Nigeria

Table 1: Characteristics of COVID-19 related publications authored by UBTH staff

Variable	Frequency (%)
Article type (n=75)	
Original research articles	58 (77.3)
Reviews/Narratives/Editorials/Letters to Editors	17 (21.7)
Study Design (n= 58 original research)	
Quantitative[a]	56 (96.5)
Qualtative	1 (1.7)
Mixed-method	1 (1.7)
Journal category (n= 75)	
International	50 (66.7)
National	18 (24.0)
Local	7 (9.3)
External collaboration	
Yes	43 (57.3)
No	32 (42.7)
External Funding	
Yes	8 (10.7)
No	67 (89.3)

[a]Quantitative studies include 55 observational studies and 1 experimental study

Table 2: Professional cadre and Departmental affiliation of Authors

Variable	Frequency (%)
Professional Cadre (N = 94)	
Medical	64 (68.1)
Dental	15 (16.0)
Nurse	5 (5.3)
Pharmacist	1 (1.1)
Laboratory scientist	2 (2.1)
Physiotherapist	1 (1.1)
Paramedic	1 (1.1)
Others	5 (5.3)
Departmental Affiliation (N = 94)	
Public Health and Community Medicine	19 (20.2)
Medicine	10 (10.6)
Obstetrics and Gynaecology	7 (7.4)
Surgery	5 (5.3)
Family Medicine	4 (4.3)
Anaesthesia	4 (4.3)
Ophthalmology	3 (3.2)
Child Health	2 (2.1)
Ear, Nose, Throat, Head and Neck Surgery	2 (2.1)
Mental Health	2 (2.1)
Medical Microbiology	2 (2.1)
Radiotherapy	1 (1.1)
Anatomic Pathology	1 (1.1)
Haematology	1 (1.1)
Oral and Maxillofacial Surgery	3 (3.2)
Periodontics	3 (3.2)
Family Dentistry	3 (3.2)
Oral Pathology and Medicine	3 (3.2)
Restorative Dentistry	3 (3.2)
Nursing	5 (5.3)
Pharmacy	1 (1.1)
Medical Laboratories	2 (2.1)
Physiotherapy	1 (1.1)
Emergency	1 (1.1)
Others[a]	6 (6.4)

Others[a] = Engineering, Linen Services, ICT

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Is there any Rationale for Use of Local Anaesthetic Agents without Adrenaline among Hypertensive Patients in Oral and Maxillofacial Surgery?

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ABSTRACT

Background: The rational use of medicine ensures a safe and efficacious use of available medicines in all clinical situations at minimal costs. (World Health Organisation, 2010). This aimed to maximise the likelihood of therapeutic efficacy and minimise the risk of adverse drug effects for an individual patient always (Xie and Frueh, 2005). There exists controversy on need for use local anaesthetic agents with or without adrenaline among hypertensive patients during minor oral and maxillofacial surgical procedures (Odai, 2023). This study was aimed to compare the anaesthetic and haemostatic effectiveness, and cardiovascular responses to lidocaine with or without adrenaline in minor oral surgery.

Methods: This was a randomized, triple-blind clinical trial carried out on subjects planned for intra-alveolar extraction of maxillary molars. Four cohorts were studied in both normotensive and hypertensive subjects. L-0 cohort, 2% lidocaine. L-80 cohort, 2% lidocaine + 12.5μg/ml adrenaline. L-100 cohort, 2% lidocaine + 10μg/ml adrenaline. L-200 cohort, 2% lidocaine + 5μg/ml adrenaline. Each cohort received 1.8 ml of the specified local anaesthetic agents for their surgery. Biodata was noted anaesthetic effectiveness evaluated. Furthermore, cardiovascular data and responses (T_0), immediately after the administration of the prescribed agent (T_1), at the end of surgery (T_2) and 60 minutes post drug administration (T_4). Lastly the haemostatic effectiveness of the agents was assessed. The data and responses were analysed and compared.

Results: The quality of anaesthesia was similar for L-80, L-100 and L-200 cohorts. L-0 evoked irregular anaesthetic response different from other agents in both normotensive (n=159) and hypertensive (n=73) subjects (figure 1). The pattern of changes in heart rate for patients receiving 0.02mg/ml of lidocaine without adrenaline were very similar to those that received 0.02mg/ml of lidocaine with various concentration of adrenaline (figure 2). L-80 proved to be the longest lasting agent and L-0 showed shortest duration (P=0.001). Whereas bleeding was controlled with varying concentrations of adrenaline, L-0 cohort bled significantly (p=0.001) (Table 1), and precipitated most complications.

Conclusion: Lidocaine (0.2mg/ml), without adrenaline showed the poorest anaesthetic effectiveness, provoked appreciable increases in heart rate and provoked most bleeding.

Keywords: Lidocaine; adrenaline; extraction; maxillary molars
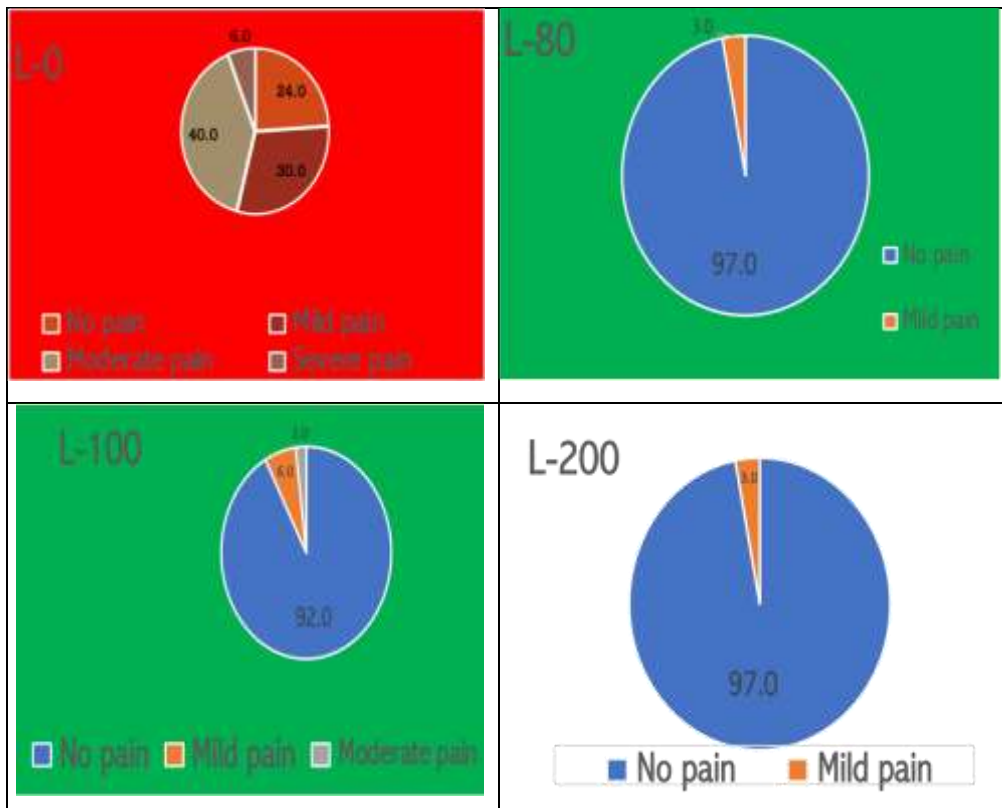
Figure 1: Evaluation of quality of anaesthesia (Visual analogue scale and Verbal Rating Scale)

L-0 (0.02 mg/ml lidocaine only), L-80 (0.02 mg/ml lidocaine + 12.5 µg/ml adrenaline), L-100 (0.02 mg/ml lidocaine + 10 µg/ml adrenaline), L-200 (0.02 mg/ml lidocaine + 5 µg/ml adrenaline). Odds for pain among people who had L-0 was 126.7 times. (Crude OR=126.7, 95%CI: 29.88-536.9, p-value<0.001), N=242.
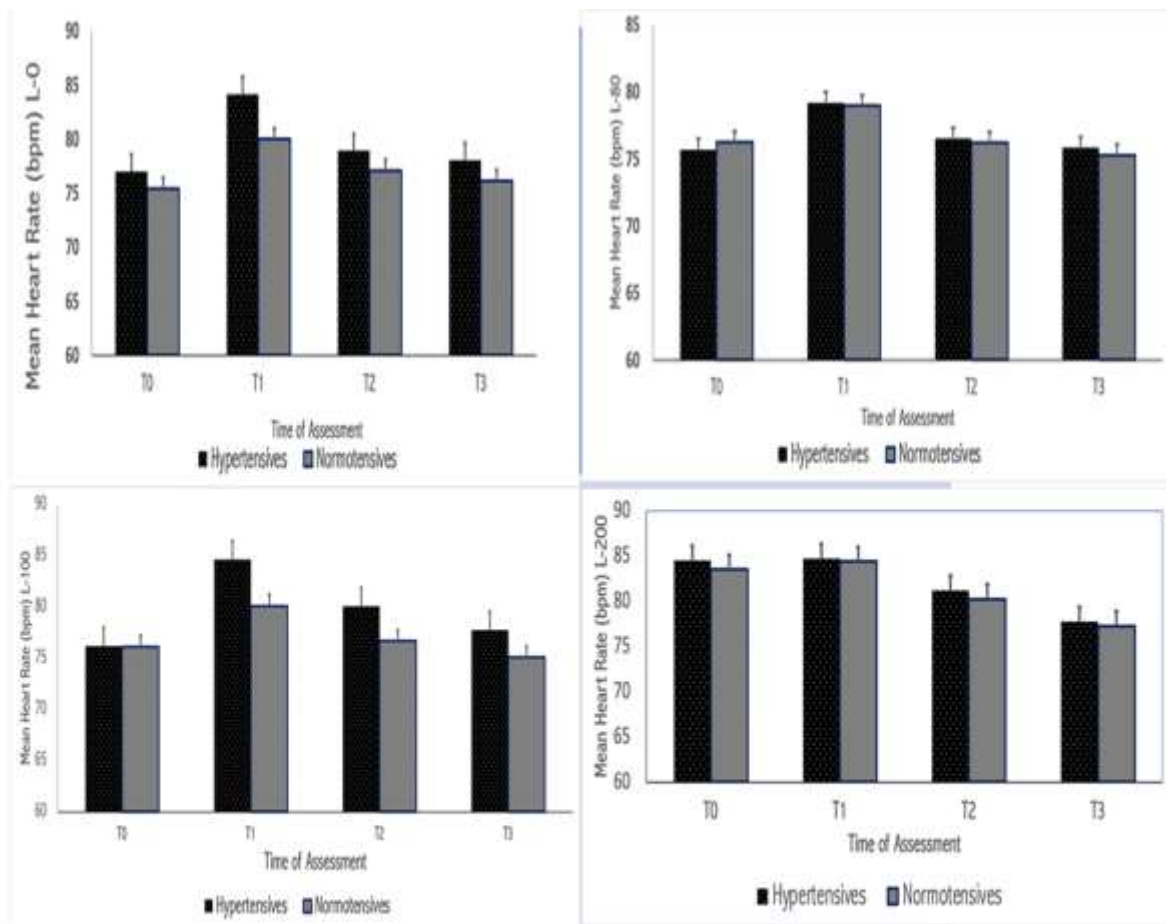
Figure 2: Overview of Mean Heart Rate in the Cohorts

At T_1 shows, 0.02mg/ml lidocaine + 5µg/ml of adrenaline provoked no significant increase in the heart rates of both hypertensive and normotensive groups. While 0.02mg/ml of lidocaine without adrenaline provoked significant increase in the heart rate of the hypertensive group ($p<0.001$).

Table 1: Estimation of blood loss

	L-0	L-80	L-100	L-200	P-value
Hyper	5.6±0.1	1.5±0.3	2.5±0.1	3.4±0.1	0.001
Normo	5.6±0.2	1.3±0.1	2.7±0.1	4.1±0.13	0.001

Estimation of blood loss from the subjects during the study for both the hypertensives (Hyper), n=83 and normotensives (Normo), n=159. L-0, 0.02 mg/ml lidocaine only; L-80, 0.02 mg/ml lidocaine + 12.5 µg/ml adrenaline; L-100, 0.02 mg/ml lidocaine + 10 µg/ml adrenaline; L-200, 0.02 mg/ml lidocaine + 5 µg/ml adrenaline. N=242.

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CMS-2023_031
Effect of COVID-19 on Health Beliefs and Health Seeking Behaviours of Heads of Households in Ekosodin, Benin City, Nigeria

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ABSTRACT

Background: The COVID-19 pandemic had a tremendous impact on the health, economy and social interactions of individuals. During the pandemic, many parents delayed seeking healthcare for themselves and their dependents due to fear of contracting the virus from healthcare environs. The belief about an outbreak and its preventive measures is necessary for adherence with recommended health advice. Poor health seeking behaviour has been shown to contribute to ineffective prevention and control of morbidity and mortality related to different diseases and pandemics such as COVID-19. This study assessed the effect of COVID-19 on the health beliefs and healthcare seeking behaviour of heads of household in Ekosodin, Benin City, Nigeria.

Methods: A descriptive cross-sectional study was carried out amongst 480 heads of households in Ekosodin community, Ovia North East Local Government Area of Edo State, Nigeria. Ethical approval was obtained from the University of Benin Teaching Hospital Research and Ethics Committee (protocol number – ADM/E 22/A/VOL. VII/148312104). Written informed consent was obtained from the respondents who were selected using a multi-staged sampling technique. The data were collected using a structured interviewer administered questionnaire adapted from previous studies on health beliefs, health seeking behaviours and COVID-19. Health beliefs and seeking behaviours of the respondents were scored and converted to percentages for easy classification appropriately. The data were analyzed using IBM SPSS version 25, with the level of significance set at $p < 0.05$. The data obtained for this study was dependent on the information provided by the respondents which could be limited by recall bias.

Results: The mean age of the respondents was 41.6 ± 13.7 years. Majority, 255 (53.1%) were males and 289 (60.2%) were in the middle socio-economic status. A tenth, 49 (10.2%) of the respondents had harmful health beliefs, while a majority, 410 (85.4%) had good health seeking behaviour. Some of the effects of COVID-19 on health beliefs and seeking behaviours include: delayed health seeking behaviour, 214 (44.6%); 198 (41.3%) did not seek healthcare; and 86 (17.9%) refused healthcare because of suspicion of COVID-19. The factors associated with health beliefs were level of education ($p < 0.001$), household income ($p = 0.008$), skill level ($p = 0.001$) and socio-economic status ($p < 0.001$). However, these were not statistically significant on further multivariate analysis. The factors associated with the health seeking behaviours were age ($p = 0.007$), marital status ($p < 0.001$) and household income ($p = 0.013$), while marital status (OR = 0.392) and level of education (OR = 0.282) were predictors of health seeking behaviours. Marital status ($p = 0.014$) and level of education ($p = 0.045$) showed a significant relationship with the effect of COVID-19 on health seeking behaviours. The predictors of the effect of COVID-19 on health seeking behaviours included marital status (OR = 3.321) and household income (OR = 0.112) as shown on multivariate analysis.

Conclusion: Majority of the respondents had good health seeking behaviours and a few had beneficial health beliefs despite the COVID-19 pandemic. The Ministry of Health should sustain health education activities that will improve health beliefs and promote better health seeking behaviour of the populace in order to enhance adherence to preventive and control measures against pandemics like COVID-19.

Keywords: Heads of households; Health beliefs; Health seeking behaviours; COVID-19, Benin City.

Table 1: Effect of COVID-19 on health beliefs and health seeking behaviour of respondents

Variable	Frequency (n = 480)	Percent
Delayed healthcare seeking		
Yes	214	44.6
No	266	55.4
Did not seek healthcare		
Yes	198	41.3
No	282	58.8
Could not get drugs due to lockdown		
Yes	74	15.4
No	406	84.6
Drugs not available at facility		
Yes	73	15.2
No	407	84.8
Turned back at the hospital		
Yes	87	18.1
No	393	81.9
Roads were blocked		
Yes	72	15.0
No	408	85.0
Refused healthcare for suspicion of COVID-19		
Yes	86	17.9
No	394	82.1
Children could not receive immunization (n=331)		
Yes	46	9.6
No	285	59.4
Could not undergo routine checkup		
Yes	74	15.4
No	406	84.6

Table 2: Effect of COVID-19 on health seeking behaviour

Variable	Regression Coefficient (β)	p-value	Odds Ratio	95% CI for OR	
				Lower	Upper
Age (years)	-0.007	0.642	0.993	0.966	1.021
Sex					
Male	0.416	0.200	1.514	0.802	2.858
Female*			1		
Marital status					
Never married	1.200	**0.018**	3.321	1.229	8.978
Ever married*			1		
Level of Education					
No formal education	-0.808	0.179	0.446	0.137	1.450
Primary	0.042	0.939	1.043	0.361	3.013
Secondary	-0.206	0.604	0.814	0.373	1.774
Tertiary*			1		
Skill level					
Skill level 0	-0.398	0.731	0.671	0.069	6.512
Skill level 1	-0.689	0.544	0.502	0.054	4.654
Skill level 2	-0.326	0.764	0.722	0.086	6.081
Skill level 3	-0.692	0.558	0.501	0.050	5.057
Skill level 4*			1		
Average household income (₦)					
<30000	-2.191	**0.047**	0.112	0.013	0.967
30000-150000	-1.760	0.091	0.172	0.022	1.324
>150000*			1		

R^2 = 5.8%-12.2% CI = Confidence Interval, OR = Odds Ratio, *Reference category

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CMS-2023_032
Effect of COVID-19 on Health Beliefs and Health Seeking Behaviour of Mothers of Under-five in Oluku Community, Benin City, Nigeria

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ABSTRACT

Background: Health systems around the world were faced with unprecedented challenges that occurred due to the rising demand for care of people during the COVID-19 pandemic. The challenges were compounded by fear, stigma, misinformation, and limitations on movement that disrupted the delivery of healthcare globally. In Nigeria, the COVID-19 pandemic affected the economy and healthcare system, influencing the health beliefs and seeking behaviours of mothers. Understanding these beliefs and behaviours is crucial for effective health promotion and preventive measures. This study utilized the Health Belief Model to determine the effect of COVID-19 on health beliefs and health seeking behaviours of mothers of under-5 children in Oluku community in Southern Nigeria.

Methods: This study utilized a descriptive cross-sectional design. A total of 624 mothers of children under the age of 5years in Oluku community, Ovia North East Local Government Area, Edo State, Nigeria were recruited for the study. Ethical approval with protocol number ADM/E 22/A/VOL.VII/148312103 was obtained from the University of Benin Teaching Hospital Research and Ethics Committee. Written informed consent was obtained from the respondents who were selected using a multistage sampling method. A structured, interviewer-administered questionnaire was used for this study. The data were analysed using the IBM SPSS version 25, with a significance level set at p < 0.05. The study utilized self-reporting from the respondents which could be affected by recall bias.

Results: Majority of the respondents, 457 (73.2%) were between 25-39 years. The mean age of respondents was 30.7 ± 6.3 years. Over three-quarters, 512 (82.1%) and 495 (79.4%) were married and Christians respectively. Over a quarter, 174 (27.9%) were of Benin ethnicity and 395 (63.3%) belonged to the middle socioeconomic status. Slightly over a quarter, 163 (26.1%) of the respondents had harmful health beliefs, while more than half, 343 (55.5%) exhibited good health-seeking behaviour. Age (p < 0.001), religion (p < 0.001), level of education (p = 0.004), average monthly income (p = 0.02), skill level (p < 0.001), and socioeconomic status (p = 0.006) were found to have a statistically significant association with the impact of COVID-19 on health beliefs. Though none of the variables were predictors of the effect of COVID-19 on health belief. Meanwhile, marital status (p = 0.001), level of education (p < 0.001), and socioeconomic status (p < 0.001) were found to have a statistically significant relationship with the impact of COVID-19 on health-seeking behaviour. However, only household monthly income (OR = 3.467) and level of education (OR = 0.196) were predictors of the impact of COVID-19 on health seeking behaviour of the respondents. None of the socio-demographic and socio-economic variables analyzed were predictors of the effect of COVID-19 on health beliefs.

Conclusion: Despite the COVID-19 pandemic, majority of the mothers of under-5children maintained beneficial health beliefs and exhibited good health-seeking behaviour. The Ministry of Health and the Nigerian Centre for Disease Control should sustain health educational activities through the media to provide correct information about pandemics like COVI-19 that could lead to possible behaviour change and promote better healthcare seeking behaviour.

Keywords: COVID-19; Health beliefs; Health-seeking behaviour; Mothers of children under 5years; Benin City.

Table 1: Predictors of the effect of COVID-19 on health beliefs

Variable	β (Regression Coefficient)	Odds Ratio	95% CI for OR		p-value
			Lower	Upper	
Age (years)	-0.44	0.957	0.904	1.013	0.127
Household size	0.087	1.091	0.913	1.302	0.338
Household monthly income (₦)					
<₦30,000	1.541	4.668	0.357	60.998	0.240
₦30,000 - ₦150,000	1.565	4.785	0.607	37.703	0.137
>₦150,000		1			
Marital status					
Never married	0.417	1.518	0.678	3.396	0.310
Ever married*		1			
Level of education					
Primary	0.357	1.429	0.224	9.106	0.705
Secondary	0.300	1.349	0.247	7.365	0.729
Tertiary*		1			
Skill level					
0-1	-1.546	0.213	0.034	1.325	0.097
2-3	-0.627	0.534	0.157	1.817	0.315
4*		1			
Socioeconomic status					
Low-Middle	0.533	1.705	0.259	11.213	0.579
High		1			

CI = Confidence Interval, OR = Odds Ratio. *Reference category, R^2 = 2.7% - 6.2%

Table 2: Predictors of health seeking behaviour due to the effect of COVID-19

Variable	β (Regression Coefficient)	Odds Ratio	95% CI for OR		p-value
			Lower	Upper	
Age (in years)	0.000	1.000	0.959	1.042	0.988
Household size	0.051	1.052	0.922	1.201	0.448
Household monthly income					
<₦30,000	1.055	2.873	0.677	12.196	0.153
₦30,000 - ₦150,000	1.243	3.467	1.586	7.576	0.002*
>₦150,000		1			
Marital status					
Never married	0.570	1.767	0.954	3.376	0.070
Ever married*		1			
Level of education					
Primary	-1.631	0.196	0.053	0.723	0.014*
Secondary	-0.766	0.465	0.163	1.325	0.152
Tertiary*		1			
Skill level					
0-1	0.937	2.553	0.903	7.219	0.077
2-3	-0.072	0.930	0.499	1.736	0.820
4*		1			
Socioeconomic status					
Low-Middle	-0.589	0.555	0.178	1.729	0.310
High		1			

*-Statistically significant, CI=Confidence Interval, OR=Odds Ratio. *Reference category, R^2 = 9.2% - 14.7%

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Knowledge, Attitude towards and Prevention Practices of COVID-19 among Heads of Households in Uselu, Benin City, Nigeria

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ABSTRACT

Background: The COVID-19 pandemic has had significant impacts on both the economy and health sectors worldwide. Though there is no definitive cure for the disease, preventive measures such as vaccines are available. The attitudes and decisions of heads of household can influence the preventive practices to curtail the spread of disease and health-seeking behaviours of other members of the family during a pandemic like COVID-19. This study hopes to proffer evidence-based solutions to improve the compliance of the general populace to preventive measures of COVID-19 in the study locale and its environs. The study determined the factors associated with the knowledge, attitude towards, and the preventive practices of COVID-19 among household heads in Benin City, Nigeria.

Methods: A descriptive cross-sectional study design was utilized among 550 household heads in Uselu, Egor Local Government Area, Benin City, Nigeria. Ethical approval was obtained from the University of Benin Teaching Hospital Health Research and Ethics Committee (protocol number ADM/E 22/A/VOL. VII/148312105). Written informed consent was obtained from the respondents who were selected using multi-staged sampling methods. Data were collected using a structured interviewer-administered questionnaire adapted from previous studies on knowledge, attitude, and prevention practices of COVID-19. Scoring systems were used to assess knowledge, attitude and preventive practices. The cumulative scores were converted to percentages and the variables were classified appropriately. The data were analyzed using IBM SPSS version 25, with the level of significance set at $p < 0.05$.

Result: The mean age of the respondents was 36.6±11.9 years. Slightly above half of the respondents 282 (51.3%) were males, 328 (59.6%) had attained secondary education, and 498 (90.5%) were at skill level 2 of occupation. Overall, majority of the respondents, 453 (83.1%), 462 (84.0%), and 510 (92.7%) of the respondents had good knowledge, a positive attitude, and good preventive practices regarding COVID-19 respectively. The most common preventive practices used by the respondents included the use of facemasks, 255 (46.4%), hand washing with soap and water, 252 (45.8%), and using hand sanitizers, 248 (45.1%). Having good knowledge ($p < 0.001$) and a positive attitude ($p < 0.001$) were found to have significant associations with good preventive practices against COVID-19. Age, sex, marital status, household size, household income, and socioeconomic status were not predictors of good preventive practices.

Conclusion: Most of the respondents had good knowledge, positive attitude and good preventive practices towards COVID-19. Having good knowledge and a positive attitude were found to have significant associations with good preventive practices against COVID-19. None of the socio-demographic and socioeconomic variables analyzed were predictors of good preventive practices of COVID-19 were age, marital status, household income, socio-economic status and attendance of an awareness programme. The Ministry of Health should make efforts to dispel myths surrounding COVID-19 and its preventive measures through continuous health education and community mobilization using the media and health workers. This will enhance the acceptance of these preventive measures such as vaccination by the heads of household, their families and the community at large.

Keywords: Preventive practices; COVID-19; Heads of households; Benin City; Nigeria.

Table 1: Knowledge, attitude and preventive practice of respondents towards COVID-19

Variables	Preventive practices towards COVID-19 (n=550) Frequency (%)		Test statistics (x^2)	p-value
	Good	Poor		
Knowledge				
Good	304 (96.8)	10 (3.2)		
Fair	130 (92.9)	10 (7.1)	27.916	**<0.001**
Poor	76 (79.2)	20 (20.8)		
Attitude				
Positive	455 (98.9)	5 (1.1)	159.500	**<0.001**
Negative	55 (61.1)	35 (38.9)		

Table 2: Predictors of preventive practices towards COVID-19 of respondents

Variables	Coefficient ratio (β)	p-value	Odds ratio	95% CI Lower	95% CI Upper
Age	0.009	0.624	1.009	0.974	1.045
Sex					
Male	-0.590	0.100	0.554	0.274	1.120
Female*			1		
Marital status					
Never married	0.336	0.426	1.400	0.612	3.202
Ever married*			1		
Household size	-0.112	0.252	0.894	0.739	1.083
Household income (₦)					
<30,000	1.665	0.240	5.283	0.329	84.778
30-150,000	0.297	0.673	1.346	0.338	5.371
>150,000*			1		
Socio-economic status					
Low	-1.336	0.386	0.263	0.013	5.406
Middle	0.368	0.634	1.445	0.318	6.560
High*			1		
Attended a COVID-19 awareness seminar					
Yes	0.944	0.058	2.569	0.970	6.806
No*					

R^2 = 2.4 – 5.9%, *Reference category

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CMS-2023_034
Evaluation of the Antioxidant and Antibacterial Activities of the Ethanol Pulp and Leaf Extracts of *Azanza garckeana*

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ABSTRACT

Background: The use of medicinal plants in healthcare is a foundation for health preservation globally (Akinyemi *et al.*, 2018). *Azanza garckeana* is a plant that is known as African chewing gum, Snot apple or Goron Tula (Maroyi, 2017); whose fruits and leaves are traditionally used to make herbal medicine to treat cough, sexually transmitted infections and malaria. Ethanol pulp and leaf extracts of the plant were evaluated for antioxidant and antibacterial activities.

Methods: Antioxidant activity was evaluated using DPPH (2, 2-Diphenyl-1-Picrylhydrazyl) and FRAP (Ferric Reducing Antioxidant Power) assays, while the antibacterial evaluation was carried out using the agar diffusion and microdilution assays on a total of six microorganisms namely *Escherichia coli, Pseudomonas aeruginosa, Staphylococcus aureus, Streptococcus spp, Klebsiella spp, and Proteus mirabilis*.

Results: DPPH antioxidant activity of the leaf extract was comparable with that of ascorbic acid, which was the standard used (Table 1). FRAP showed lower values. The ethanol pulp and leaf extracts inhibited the growth of all microorganisms used for the study (Table 2). The antioxidant and antibacterial activities of the ethanol pulp and leaf extracts of *Azanza garckeana* revealed the reason for the traditional use of the fruits and leaves of this plant for herbal medicine. The antibacterial activity of these extracts can be attributed to bioactive compounds with antimicrobial activity present in the plant parts (Momodu *et al.,* 2022).

Conclusion: Antioxidant and antibacterial activities of the ethanol pulp and leaf extracts of *Azanza garckeana* support the traditional use of the fruits and leaves of this plant for herbal medicine and could be exploited in the treatment of infections in conventional medicine.

Keywords: *Azanza garckeana*; Pulp; Leaf; Antioxidant; Antibacterial

Table 1: DPPH Radical Scavenging Activity of Ethanol Pulp and Leaf Extracts of *A. garckeana*

Conc. (µg/ml)	DPPH Inhibition % (Ethanol Pulp Extract)	DPPH Inhibition % (Ethanol Leaf Extract)	DPPH Inhibition % (Ascorbic Acid)
200	10.38± 0.22	16.71 ± 0.12	95.67 ± 0.15
400	11.80 ± 0.35	47.03 ± 0.17	96.22 ± 0.15
600	12.02 ± 0.32	78.88 ± 0.19	94.92 ± 0.26
800	13.09 ± 0.34	90.27 ± 0.19	95.75 ± 0.12
1000	13.07 ± 0.12	89.21 ± 0.22	97.37 ± 0.24

Table 2: Antibacterial Activity of Ethanol Pulp and Leaf Extracts of *A.garckeana*

Organism	Zone diameter of Inhibition Pulp extract (mg/ml)	Minimum Inhibitory concentration Pulp extract (mg/ml)	Zone diameter of Inhibition leaf extract (mg/ml)	Minimum Inhibitory concentration leaf extract (mg/ml)
Escherichia coli	20	5	20	2.5
Pseudomonas aeruginosa	14	1.25	18	2.5
Staphylococcus aureus	24	1.25	24	5
Streptococcus spp	24	5	28	2.5
Klebsiella spp	20	2.5	20	1.25
Proteus mirabilis	14	2.5	22	1.25

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CMS-2023_035
Evaluation of Serum Calcium in Preterm Babies at the University of Benin Teaching Hospital, Benin City

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ABSTRACT

Background: Hypocalcaemia is a well-established morbidity among neonates and affected babies may be asymptomatic or present with severe manifestations like seizures, apnoea and laryngospasms. [1,2,3] These associated morbidities are preventable/treatable with the administration of calcium, a readily available and affordable intervention in resource poor settings. Nigeria is the third highest contributor to preterm births globally.[4] Assessing the serum calcium concentration of preterms would provide useful information to aid in deciding regarding empirical calcium administration to preterm babies.
The goal of this study was to evaluate the serum calcium status of preterm babies delivered at the University of Benin Teaching hospital (UBTH) and to determine the relationship between serum calcium levels and gestational age (GA), gender and birth weight (BW).

Methods: This was a descriptive, cross-sectional study in which 117 consecutive preterm babies delivered at UBTH were recruited, over a two-year period. The gestational age was determined by dates, ultrasound and gestational maturity assessment using Ballard scoring. Their biodata was collected using a proforma while anthropometric parameters were determined using standard methods. Three millilitres of cord blood was taken aseptically at birth for serum calcium determination. Hypocalcaemia was defined as serum calcium <7mg/dl (7.0 – 11.5mg/dl).[5] Statistical analysis was done using student's t-test and ANOVA. Level of significance was set at $p < 0.05$.

Results: The mean gestational age was 30.87 ± 2.38 (26 - 36) weeks, mean weight was 1458.72 ± 457.15 (640 - 3400) grammes and male to female ratio was 1:1.1. Mean serum Calcium concentration was 7.66 ± 1.43mg/dl (3.2 – 11.6). Twenty-nine (24.7%) study participants were hypocalcaemic while three (2.5%) were hypercalcaemic. Serum calcium did not vary significantly with gestational age ($p = 0.23$), birth weight ($p = 0.27$) or gender ($p = 0.94$).

Conclusion: There is a high prevalence of hypocalcaemia among preterm newborns. Calcium supplementation in pre-term babies following delivery might be useful irrespective of GA, BW and gender. Serum calcium assay should be offered to all pre-term babies and treatment offered when there is hypocalcaemia, irrespective of symptomatology.
Keywords: calcium, preterm, neonate, hypocalcaemia.
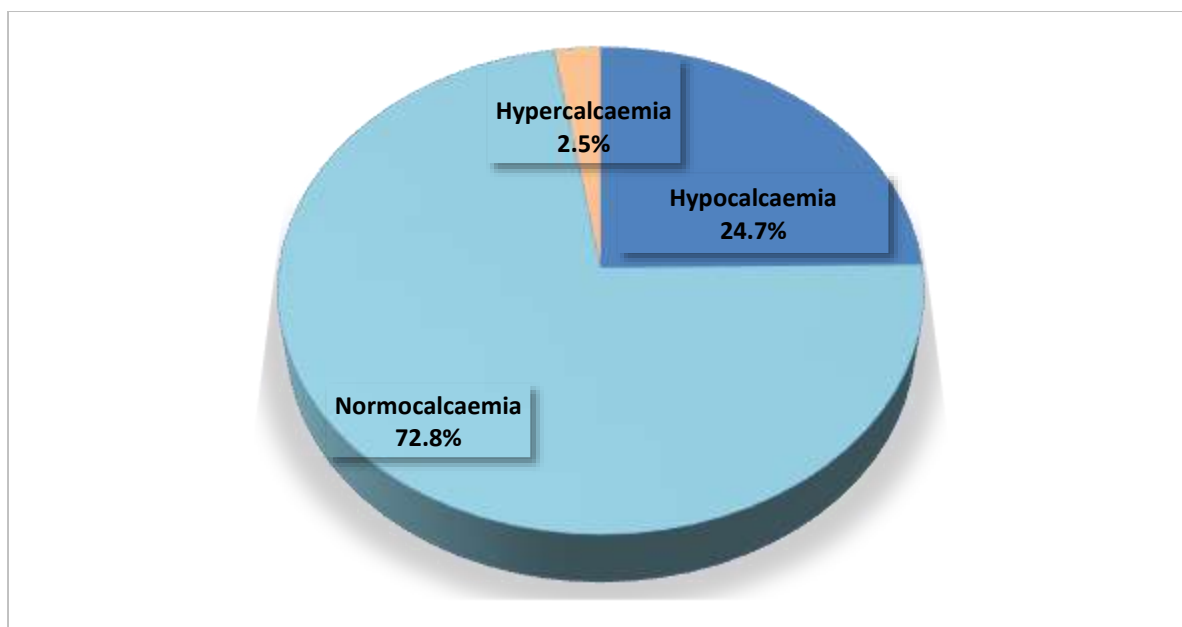
Figure I: Serum calcium status

Table 1: Relationship between Mean Serum Calcium Concentration And Gender, GA And BW

Variables	N = 117 (%)	Mean serum calcium ± SD	Statistical tool	P - value
Sex			**t – test**	
Male	56 (47.8)	7.67 ± 1.22	0.071	
Female	61 (52.2)	7.65 ± 1.61		0.94
GA			**F - Test**	
Extreme Preterm	12 (10.3)	7.03 ± 1.32	1.45	0.23
Very Preterm	56 (47.8)	7.56 ± 1.76		
Moderate Preterm	33 (28.2)	7.96 ± 0.82		
Late Preterm	16 (13.7)	7.86 ± 1.07		
BW				
ELBW	11 (9.4)	7.60 ± 1.51	1.30	0.27
VLBW	60 (51.3)	7.87 ± 1.42		
LBW	41 (35.0)	7.49 ± 1.34		
NBW	5 (4.3)	6.76 ± 2.03		

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CMS-2023_037

Knowledge, Prevalence and Factors associated with Depression among Undergraduate Medical Students of the University of Benin in South-South Nigeria

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ABSTRACT

Background: There is a growing increase in the burden of mental disorder in all countries and depression being a common mental disorder is often seen among university students. It is characterized by loss of interest or pleasure, sadness, low self-worth, disturbed sleep or appetite, poor concentration, etc.[1] Globally about 350 million people live with depression and it has a prevalence of 2.7% among Nigerian Students. Medical students in particular are believed to experience greater incidence of psychological disorder which will affect their academic performance as they miss classes, assignments, examinations and may be forced to leave the University ultimately this may lead to suicidal ideation and eventually suicide. Those who may graduate will end up as depressed doctors leading to poor health service delivery[2,3.] Due to these negative effect posed by depression attention should be placed in order prevent reduction in academic productivity, death of its sufferers which will affect familiies and the community As well as avoiding the long standing social and economic consequences. This study is designed to assess the knowledge, prevalence and factors associated with depression among undergraduate medical students of the University of Benin, Benin City Edo State. Nigeria

Methods: A descriptive cross-sectional study design was conducted among the undergraduate medical students of the University of Benin, Benin City, Edo State, Nigeria, between December, 2021 and March, 2023. Four hundred and thirty four students in 200 level to 600 level were selected using stratified random sampling technique and data was collected by semi-structured self administered questionnaires. The data was coded, entered and analyzed using IBM Statistical Package for the Social Sciences (SPSS) version 25.0 software. Tests of significance using appropriate tests of association was adopted and used at 95% confidence interval and p-value = <0.05 was accepted as statistically significant.

Results: The mean age was 22.3±3.0 years. More than half 226 (52.1%) of the respondents were females while males constituted 208 (47.9%) of the respondents, Overall knowledge score for depression was good 208 (85%). The prevalence of depression among the respondents was 85 (19.6%). Among those who were depressed the significantly associated factors associated with depression among the respondents were; alcoholism, use of psychoactive substances, poor interpersonal relationship with colleagues, financial problems, heartbreak, sexual abuse, death of a loved one and academic stress.

Conclusion: In this study, the knowledge of depression among medical student is high, the prevalence is worrisome and quite a number of risk factors were identified. It is important for the school authority to set up easily assessable, private and student friendly counselling department which will help identify the at risk population and help them build coping strategies.

Keywords: Depression; Medical students; Undergraduate

Table 1: Overall prevalence of depression among respondents

VARIABLE	FREQUENCY (n=434)	PERCENT
Not depressed	349	80.4
Depressed	85	19.6
	(n=85)	
Mild	44	51.8
Borderline	16	18.8
Moderate	20	23.5
Severe	5	5.9

Table 2: Factors and prevalence of depression among respondents

Risk factors	Prevalence of Depression		x^2	p-value
	Depressed (n=85) Frequency (%)	Not depressed (n=349) Frequency (%)		
Social/ economic factors				
Alcoholism	5 (55.6)	4 (44.4)	7.550	0.006*
Use of psychoactive substances **	12 (36.4)	21 (63.6)	6.704	0.035*
Poor interpersonal relationship with colleagues	21 (50.0)	21 (55.0)	27.388	0.000*
Financial problems	47 (28.3)	119 (71.7)	16.311	0.000*
Inadequate accommodation	20 (16.8)	99 (83.2)	0.804	0.370
Psychological/medical factors		107 (82.9)		
Verbal harassment/public embarrassment by lecturers	22 (17.1)	28 (57.1)	1.567	0.457
Heartbreak	21 (42.9)	6 (46.2)	18.994	0.000*
Sexual abuse	7 (53.8)	6 (75.0)	9.988	0.002*
Physical abuse	2 (25.0)	99 (82.5)	0.152	0.697
Sleeping pattern	21(17.5)		0.723	0.697
Family/medical factors				
Death of a loved one	25 (29.1)	61 (70.9)	6.150	0.046*
Family history of depression	7 (21.1)	26 (78.9)	0.061	0.805
Chronic illness	5 (29.4)	12(70.6)	1.085	0.298
Academic factors				
Examination failure	14 (27.5)	37 (72.5)	2.270	0.132
Repeating a class	57 (19.6)	234 (80.4)	0.000	0.999
Long stay in medical school	45 (18.8)	195 (81.2)	0.238	0.626
Academic stress	49 (44.1)	62 (55.9)	55.795	0.000*
Long travel from hostel to learning area	8` (25.8)	23 (74.2)	0.820	0.381

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CMS-2023_038
Assessment of Oral Health Status of Adolescents in Benin City

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ABSTRACT

Background: Poor oral health is a significant public health concern, as it is associated with various chronic diseases such as cardiovascular diseases, diabetes, respiratory diseases, stroke, oral cancers, and dementia. Dental caries, in particular, can negatively impact the quality of life among adolescents, leading to pain and discomfort. Despite its importance, access to dental services remains limited for many adolescents. Understanding the oral health status of this population with limited access to dental services is crucial for identifying potential interventions and improving overall oral health outcomes. This study aimed to assess the oral health status of adolescents in Benin City, particularly those facing limited access to dental services.

Methods: A descriptive cross-sectional study was conducted among in-school adolescents aged 10-19 years, attending both public and private schools in Benin City. The minimum sample size was calculated using the formula for estimating a single proportion. A two-stage sampling technique was used to select the adolescents. Data were collected through a pretested, interviewer-administered questionnaire and dental examinations to assess for dental caries and oral hygiene index, was used to determine the oral health status of the adolescents. The oral hygiene index scores were recorded, and participants were classified into three categories: good, fair, and poor oral hygiene. Ethical clearance to conduct this research was obtained from the Research Ethics Committee of the University of Benin Teaching Hospital. Informed consent was obtained from the parents or guardians of the adolescents, and assent was obtained from the adolescents themselves. Data analysis was performed using the IBM SPSS version 22.0 software. Descriptive statistics were used to summarize the demographic characteristics of the participants and the prevalence of dental caries. Chi-square test (and Fishers exact where applicable) was used to assess the association between various factors and oral health status. The level of significance was set at $p < 0.05$.

Results: A total of 462 in-school adolescents with a mean age (SD) of 13.36 ± 1.68 years participated in the study, of which females (280) comprised 60.6% of the respondents. Dental examination revealed a high prevalence of caries 284, (61.5%) among the participants. Notably, attending public schools was significantly associated with a higher prevalence of caries ($p = 0.013$). Other factors such as the substance used for brushing teeth ($p = 0.012$), the decrease in frequency of teeth brushing ($p < 0.001$), changing toothbrushes ($p = 0.002$), and dental visits ($p < 0.001$) were found to be significantly associated with dental caries (Table 1). Overall, only 35.1% of adolescents had good oral hygiene index scores. Conversely, attending public schools ($p < 0.001$) was significantly associated with good oral hygiene index (Table 2).

Conclusion: The study findings highlight a poor oral health status among in-school adolescents. Efforts should be made to improve access to dental services, promote oral hygiene practices, and raise awareness about the importance of oral health among adolescents in Benin City.

Keywords: Oral health; Adolescents; In-school; Dental services; Dental caries; Benin City

Table 1: Socio-demographic characteristics, dental hygiene factors and prevalence of caries among respondents

Variables	Caries (n=284)	No caries (n=178)	χ^2	p
Age group (years)				
10-13	126 (62.1)	77 (37.9)	0.055	0.815
14-19	158 (61.0)	101 (39.0)		
Sex				
Male	114 (62.6)	68 (37.4)	0.172	0.678
Female	170 (60.7)	110 (39.3)		
Type of school				
Public	189 (65.9)	98 (34.1)	6.142	0.013*
Private	95 (54.3)	80 (45.7)		
LGA				
Oredo	131 (66.5)	66 (33.5)	4.734	0.094
Ikpoba okha	78 (60.9)	50 (39.1)		
Egor	75 (54.7)	62 (45.3)		
Frequency of teeth brushing				
2-3 times a week	4 (100.0)	0 (0.0)	25.341	<0.001*
Everyday	199 (55.4)	160 (44.6)		
2 or more times a day	81 (81.8)	18 (18.2)		
What is used to brush				
Toothpaste	280 (61.7)	174 (38.3)	8.897	0.012*
Charcoal	0 (0.0)	4 (100.0)		
Chewing stick	4 (100.0)	0 (0.0)		
Texture of toothbrush				
Hard	82 (60.3)	54 (39.7)	0.144	0.930
Medium	130 (61.6)	81 (38.4)		
Soft	72 (62.6)	43 (37.4)		
Substance used to remove food in between teeth				
Dental floss	21 (61.8)	13 (38.2)	2.654	0.448
Toothpick	254 (61.2)	161 (38.8)		
Broom, stick	5 (55.6)	4 (44.4)		
Any pointed object	4 (100.0)	0 (0.0)		
When teeth is brushed				
Morning only	98 (60.9)	63 (39.1)	0.038	0.846
Morning and night	186 (61.8)	115 (38.2)		
Frequency of changing toothbrush				
1-3 months	190 (58.6)	134 (41.4)	14.369	0.002*
4-6 months	55 (78.6)	15 (21.4)		
1 year	5 (100.0)	0 (0.0)		
Anytime/ don't know	34 (54.0)	29 (46.0)		

*Statistically significant

Table 2: Socio-demographic characteristics and oral hygiene index among respondents

Variables	Good (n= 162)	Fair (n = 201)	Poor(n = 99)	χ^2	P
Oral hygiene index					
Debris and Calculus					
Age group (Years)					
10-13	62 (30.5)	96 (47.3)	45 (22.2)	3.397	0.183
14-19	100 (38.6)	105 (40.5)	54 (20.8)		
Sex					
Male	70 (38.5)	95 (52.2)	17 (9.3)	26.679	<0.001*
Female	92 (32.9)	106 (37.9)	82 (29.3)		
Type of school					
Public	116 (40.4)	100 (34.8)	71 (24.7)	23.137	<0.001*
Private	46 (26.3)	101 (57.7)	28 (16.0)		
LGA					
Oredo	72 (36.5)	77 (39.1)	48 (24.4)	24.006	<0.001*
Ikpoba-okha	26 (20.3)	74 (57.8)	28 (21.9)		
Egor	64 (46.7)	50 (36.5)	23 (16.8)		

*Fishers exact

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CMS-2023_041
Pattern and Outcome of Paediatric Non-Communicable Diseases in a Teaching Hospital in Southern Nigeria

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ABSTRACT

Background: Non-communicable diseases (NCDs) are chronic non-transmissible diseases that are mainly attributable to lifestyle changes. There is a global increase in these category of diseases, which in developing countries constitute an added burden to the already existing burden of communicable diseases. There is paucity of data on paediatric NCDs in Nigeria. This study aims at determining the prevalence, pattern, length of hospital stay and outcome of children admitted with a non-communicable disease.

Methods: This is a retrospective record review of children admitted into the paediatric wards of our hospital. The data obtained was analyzed using the Statistical Package for Social Sciences (IBM SPSS) version 23. The student t-test was used to compare the mean length of stay between those admitted for NCDs and those with a communicable disease while ANOVA was used for comparison mean length of stay of the various units. Association between outcome and age, length of hospital stay and category of NCDs were analyzed using Chi Square.

Result: A total of 860 participants, consisting of 513 (59.7%) males and 347 (40.3%) females were studied. The prevalence of NCDs was 32.2% with sickle cell disease (33.9%), neoplasms (22%), cardiovascular (14.4%) and neurological (7.9%) diseases constituting the major non-communicable diseases recorded. There was a significantly longer duration of hospital stay and higher mortality rate in patients admitted with an NCD in comparison to those with a communicable disease. There was a significant association between mortality and category of NCD with a greater contribution from neoplastic diseases. (p= 0.022)

Conclusion: This study, like previous studies, showed a high prevalence of paediatric non-communicable diseases although communicable diseases were still more prevalent. This is associated with poorer outcome and longer duration of hospital stay. A more concerted effort by all stakeholders should be directed at hurting this trend.

Keywords: Non-communicable diseases; children; prevalence; pattern; outcome; length of stay

Table 1: Demographic and clinical characteristics of the study population

Characteristic	Frequency (n = 860)	Percent
Age group (years)		
<12months	336	39.1
1 – 5 yrs	249	29.0
6 - 9 yrs	115	13.4
10 - 18 yrs	160	18.6
Sex		
Male	513	59.7
Female	347	40.3
Units		
Cardiology	39	4.5
Endocrine	9	1.0
Gastroenterology	79	9.2
Haemato-oncology	188	21.9
Infectious diseases	225	26.2
Nephrology	37	4.3
Neurology	123	14.3
Respiratory	160	18.6
Disease category		
Communicable	583	67.8
Non-communicable	277	32.2
Length of hospital stay		
1 – 10	689	80.1
11 - 20	119	13.8
21 - 30	28	3.3
> 30	24	2.8
Outcome		
DAMA	15	1.8
Died	39	4.5
Discharged	787	91.5
Transferred	19	2.2

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Combined High-Salt and High-Fat Diet-induced Cardiovascular Diseases: The Preventive Effects of Yoyo Cleanser Bitters

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ABSTRACT

Background: There has been an increasing scourge of cardiovascular diseases in low income countries, but for economic reasons, there has been low compliance, with the use of orthodox drugs that help prevent such diseases (1). The WHO, to checkmate this increase, have advocated for research into local medicinal products that will serve as an "alternative" to the known orthodox drugs, that help prevent cardiovascular diseases (2,3). It was therefore the aim of this study to evaluate the therapeutic potential of the locally available herbal bitters, called "Yoyo Cleanser Bitters" (4), as a supplement for the possible prevention of cardiovascular diseases that may be induced following the consumption of a combination of a "high-salt and high-fat diet".

Methods: Thirty male *Wistar* rats, used for this 6-week study, were randomly divided into six groups of five rats each. The average weight of each group of rats was 200g. Group 1 rats were fed the basal diet, while the other groups were fed a combined high-salt and high-fat diet, which has already been established as a "combined diet" that can induce cardiovascular diseases in rats (5). The rats in control groups 1 and 2 were given clean tap-water as a placebo, those of group 3 were given a combination of the anticholesterolaemic drug (atorvastatin) and the anti-hypertensive drug (lisinopril), while those of groups 4 to 6 were respectively administered Yoyo cleanser bitters doses of 600mg/kg, 1,100mg/kg and 2,200mg/kg body weight of the rats'. Specialized and standardized ELISA and colorimetric assay kits were used for the biochemical indices to be determined, and the manufacturer's instructions were strictly followed. The plasma biochemical indices determined include, the levels of high sensitive C - reactive protein (HsCRP), monocyte chemotactic protein-1 (MCP-1), malondialdehyde (MDA), cardiac troponin-T (cTnT), as well as the total antioxidant capacity (TAC), angiotensin converting enzyme (ACE) activity, the lipid profile, the liver and kidney function statuses, and the atherogenic index of plasma (AIP). The results were presented as mean ± SEM. The data were analyzed using the GraphPad Prism 8.0.2, one-way analysis of variance (ANOVA), followed by the Tukey's multiple comparisons post hoc test. A p-value of less than 0.05 (p<0.05) was accepted as statistically significant.

Results: the result of this study reveal that Yoyo cleanser bitters was able to significantly prevent the elevation in plasma levels of HsCRP and MCP-1. It was also able to significantly improve the plasma TAC and inhibit the formation MDA. It maintained the plasma ACE activity, the cTnT and bilirubin levels and significantly prevented the elevation of plasma total cholesterol, triglyceride, LDL-cholesterol, VLDL-cholesterol levels, as well as significantly elevated the HDL-cholesterol level, and reduced the AIP. It was also found to be as efficacious as a combination of atorvastatin and lisinopril.

Conclusion: The positive results of this study, indicates that Yoyo Cleanser bitters, as a therapeutic supplement, has great potentials in the prevention of cardiovascular diseases in those at risk. It is therefore recommended for further investigation and evaluation in human subjects.

Keywords: High-salt diet, high-fat diet, cardiovascular diseases, Yoyo bitters, hypertension.

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CMS-2023-043

Clinical and Echocardiographic Characteristics of Children with Dilated Cardiomyopathy at the University of Benin Teaching Hospital, Benin City

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ABSTRACT

Background: Dilated cardiomyopathy (DCM) is a condition in which the left ventricle is grossly dilated, hypokinetic and associated with systolic dysfunction. The prevalence is 57 per 1000 globally[1]. It could be genetic or secondary to conditions like beriberi. Dilated cardiomyopathy is a common cause of heart failure in children in North America and Europe and the leading cause of cardiac transplantation in the same regions.[2] There are no population-based prevalence in Africa. DCM was diagnosed in 1.55% of children who had echocardiography in Lagos State University Teaching Hospital. Genetic studies and screening are required to identify family members with the condition.[2] The prognosis is poor in most cases and treatment which include cardiac transplantation and use of ventricular assist device are quite expensive[3], and beyond the reach of most Nigerians. The objective of this study was to determine the prevalence of the DCM and present its clinical and echocardiographic characteristics of children seen in the echocardiography laboratory of the University of Benin Teaching Hospital.

Methods: All the paediatric echocardiograms done between February 2008 and January 2023 were reviewed for the diagnosis of DCM. The diagnosis of DCM was based on the presence of grossly dilated ventricles, low ejection fraction (EF) and fractional shortening (FS). Over the study period, 4777 echocardiograms were done using standard methods. Statistical analysis was done using IBM SPSS 21.0, the means of continuous variables such as age and ejection fraction were determined and multiple means were compared using t test or F statistic. P value < 0.05 was considered significant.

Results: Of the 4777 echocardiograms done over the study period, 39 children had DCM, which represents 0.8% or 8.2 cases per 1000 children. There were 18 (46.2%) males and 21 (53.8%) females. The ages of the children ranged from 3 months to 18 years with a mean (SD) of 7.8 ± 6.0 years. The three major indications for echocardiogram were cardiomegaly 13 (33.3%), DCM 8 (20.5%) and RHD in 6 (15.4%). All the children presented with heart failure, while 15 (38.5%) had pericardial effusion. The fractional shortening (FS) values ranged from 10.6% - 31.2% with a mean of 18.6 ± 5.5% while the ejection fraction (ES) ranged from 22.7% - 59.0%, the mean being 39.1 ± 10.8%. The mean FS and EF of the males and females were not significantly different, p = 0.61 and P = 0.35 respectively.

Conclusion: The prevalence of DCM from the echocardiogram laboratory is low compared to global estimate. Heart failure and pericardial effusion are common associated findings. A high index of suspicion is needed in cases presenting with heart failure and pericardial effusion as the underlying diagnosis could be DCM

Keywords: Dilated cardiomyopathy; echocardiography; children; Benin City

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CMS-2023_044

Coping Strategies and their Relationship with Anxiety Symptoms among Healthcare Workers during COVID-19 Pandemic in University Of Benin Teaching Hospital, Nigeria

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ABSTRACT

Background: Various coping strategies have differing effects on ameliorating or potentiating anxiety symptoms. There is a dearth of empirical data to corroborate this assertion among health care workers (HCWs) during the on-going coronavirus (COVID-19) pandemic in South-South Nigeria. This study aimed to assess the coping strategies that were predominantly used by the health care workers and determine the relationship between coping strategy and anxiety disorder.

Methods: The study was cross-sectional in design. The 28-item Brief COPE Inventory, 7-item Generalized Anxiety Disorder (GAD-7) Scale and a Socio-demographic data collection sheet were used to collect data from health care workers who are bona fide staff of the hospital, aged 18 years and above, have no history of a chronic medical illness, have been working in the hospital prior to the outbreak of the COVID-19 pandemic in Nigeria were selected using convenience sampling technique. Data analysis was done using SPSS version 26 and the level of significance was set at ≤ 0.05.

Results: Two hundred and thirteen HCWs participated in the study and the prevalence of anxiety symptoms among them was 25.4%. Among the adaptive coping strategies, the respondents had the highest mean scores on "acceptance", "active coping" and "instrumental support" (4.24, 4.23 and 4.23 respectively); thus, these strategies were more frequently used than the other adaptive coping strategies. The proportions of the HCWs that used the adaptive coping strategies were highest with the "emotional support", "active coping", "instrumental support" and "acceptance" (51.6%, 46.0%, 45.5% and 44.6% respectively). Although none of these adaptive coping strategies was significantly independently associated with a reduction in the risk of anxiety disorder, they had a significant joint effect in reducing the risk of anxiety disorder (t = 4.210, p = <0.001, and 95% CI = -0.182- -0.066).
Among the maladaptive coping subscales, the highest mean scores: 4.00 and 3.40; were recorded on the "self- distraction" and "venting" subscales respectively; thus they were more frequently used than the other maladaptive coping strategies. The proportions of the HCWs that used the maladaptive coping strategies were highest with "self-distraction" (58.7%) and "venting (41.3%). Maladaptive coping strategies had a significant joint effect increasing the risk of anxiety disorder (t = 3.992, p = < 0.001, 95% CI = 0.130 – 0.382)).

Conclusion: Adaptive coping strategies jointly significantly reduced the risk of anxiety symptoms; while maladaptive coping styles jointly increased the risk. Planning and development of effective treatment intervention for HCWs should take cognizance of the coping strategies of the majority of them and aim at appropriately directing their coping mechanism as this will go a long way to enhance their mental stability.

Keywords: Coping strategies; Anxiety; Coronavirus; Healthcare workers; Nigeria.

Table 1: Liner regression of anxiety scores on the independent variables

Independent variable	Beta	T	*P*	95% confidence interval
Constant		2.506	0.013	0.860 – 7.203
Adaptive coping	-0.272	-4.210	0.000	-0.182 - -0.066
Maladaptive coping	0.258	3.992	0.000	0.130 – 0.382

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CMS-2023_045
Antidiabetic Effects of Red Beetroot in Streptozotocin Induced Diabetic Rats in Experimental Animals

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ABSTRACT

Background: Beetroot is the taproot portion of beet plant, and usually known as the beet. Several of the cultivated varieties of *Beta vulgaris* are grown for their edible taproots and greens. In recent years, the root vegetable *Beta vulgaris rubra* referred to as beetroot has attracted much attention as a health promoting functional food. The root extracts of *Beta vulgaris* possess antihypertensive, antioxidant, anti-inflammatory, and hepatoprotective activities. The presence of Betalain in beetroot also accounts for its high medicinal value. But the use of the extract in the treatment of diabetes has not been scientifically validated.

Methods: The plant was identified by a Taxonomist a voucher number UBH_B 374 was obtained. The beetroots were washed thoroughly, peeled and chopped finely into small bits of about 2 cm each. The chopped beetroot was blended into a juice. The juice was extracted using muslin cloth and freeze dried. Diabetes mellitus was induced by a single intraperitoneal administration of streptozotocin at 60 mg/kg body weight dissolved in 0.05M .citrate buffer at pH 4.5. There were five groups with 5 rats each. Group I (Normal rats + distilled water); Group II (Normal rats + extract); Group III (Diabetic rats + distilled water); Group IV (Diabetic rats + extract); Group V (Diabetic rats + Glibenclamide). The glucose and weight of the animals were determined weekly. Normal and diabetic rats were treated with aqueous extract (500 mg/kg body weight/day/rat) of beetroot or glibenclamide (5 mg/kg body weight/day/rat) for 30 days. Animals were euthanized on day 30 after an overnight fast and blood collected for assays. The pancreas was dissected and adherent tissues removed, and immersed in 10% buffered formalin for histopathological evaluation.

Results: We noted a significant decrease ($p<0.05$) in blood glucose in the animals administered beetroot or glibenclamide when compared to diabetic control. The total cholesterol level was lower in the diabetic control compared to the animals that received beetroot extract or glibenclamide. Triglyceride, artherogenic index, VLDL-C and Total cholesterol/HDL-cholesterol ratio were lower in the diabetic rats that were treated with extract when compared to diabetic control and the rats administered glibenclamide. The level of LDL-C and non-HDL-cholesterol were lowered in diabetic treated rats with beetroot extract when compared to the animals that were administered glibenclamide. The level of HDL-cholesterol in the diabetic rats that received beetroot extract was higher than the glibenclamide treated animals. The level of cardiovascular risk ratio was found to be lower in the animals that received glibenclamide compared to the diabetic control and the treated group with beetroot extract. The weights of the animals were significantly decreased in the diabetic groups when compared to normal control. Histopathologically, the pancreas of rats that were administered beetroot extract revealed a resurgence of islet and acini cells when compared to diabetic control.

Conclusion: This study showed that beetroot has the potential of unlocking the challenges of diabetes mellitus, though it was in animal model.

Keywords: Blood glucose; Streptozotocin; Rats; *Beta vulgaris;* Triglycerides

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CMS-2023_046

Effect of Unilateral Isometric Handgrip and Unilateral Isometric Quadriceps Exercise on Mean Arterial Pressure in Hypertensive Stroke Survivors: A Randomized Controlled Trial

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ABSTRACT

Background: Hypertension is a major risk factor for stroke, and post-stroke survivors often confront persistent cardiovascular challenges. Exercise interventions have shown promising results in improving cardiovascular health in various populations, including stroke survivors. Among the different exercises, isometric exercises, such as Isometric Hand Grip (IHG) and Isometric Quadriceps Exercise (IQExs), have gained attention for their potential benefits in improving blood pressure control and overall cardiovascular health. Mean Arterial Pressure (MAP) is a key indicator of perfusion to vital organs and tissues, playing a pivotal role in maintaining overall cardiovascular function. In hypertensive stroke survivors (HSS), MAP assumes even greater significance, as their cardiovascular system are often under increased strain. However, the specific effects of these exercises on MAP in HSS remain understudied. This study investigated the effect of Unilateral IHG and Unilateral IQEXs training on MAP in HSS.

Methods: This study was conducted among HSS attending the Neurology outpatient clinic of UBTH, Benin City, Nigeria. Twenty-seven participants were recruited from the medical records unit and assessed for eligibility using a Physical Activity Readiness Questionnaire. Participants were randomly assigned to either the experimental group, or the control group, using the Lottery method. The instrument used to measure blood pressure (BP) was sphygmomanometer. The MAP was calculated using the BP (DBP+1/3{PP}). Descriptive statistics (mean and standard deviation) summarized the data, and repeated measures ANOVA determined differences between variables and sessions. The level of significance was set at $p < 0.05$.

Results: A total of 12 HSS (6 per study group) met the inclusion criteria, with a mean age (SD) of 61.33 (12.50) years, and 61.75 (8.50) years for experimental and control group respectively, participated in this study. The gender distribution of the study comprised of 60% male and 40% female. Also, 30% of the participants were between 40 - 50years. The one way repeated measures ANOVA revealed a statistically significant difference in mean MAP (right & left) after four weeks of IHG and IQExs training in time ($F(1.55) = 6.08$, $P < 0.05$; $F(4)=6.52$, $p <0.05$ respectively). Pairwise comparisons indicated that MAP (right & left) significantly decreased between baseline week and week one ($p < 0.05$). However the control group showed no effect on MAP.

Conclusion: IHG and IQExs training led to a significant reduction in mean MAP (right and left) in HSS. These findings suggest that targeted isometric exercises may be beneficial for improving perfusion as well as cardiovascular health in HSS. Further research with larger sample sizes and longer follow-up periods is warranted to confirm and therefore generalize these findings. The potential benefits of isometric exercises should be considered in designing exercise interventions for HSS.

Keywords: Unilateral Isometric Hand Grip; Unilateral Isometric Quadriceps Exercise; Mean Arterial Pressure.

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Enhancement of Research Capacity Using the Training, Mentorship and Grantmanship Integrated Model

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ABSTRACT

Background: A comprehensive collaborative model for building research capacity at the level of individual researcher and the institution will entail using the training, mentorship and grantmanship integrated model. This discourse aims to describe a model being used to build research capacity through ensuring a research-ready workforce that can both implement research outcomes and contribute to further research activity. The key principles underpinning the success of the model are set out and are intended to stimulate debate on the critical factors for enhancing research capacity amongst researchers.

Methods: With a focus on the effectiveness of training, mentorship and grantmanship on capacity development, a survey of capacity strengthening initiatives aimed at increasing research knowledge and skills of investigators was comprehensively carried out by reviewing relevant literature in various search engines (google scholar, google, pubmed, sciencedirect, bing, etc.), in additional to bringing professional knowledge/expertise, intuitive observation and conceptual analysis of the subject matter to bear systematically.

Results: Findings show that the plausible drivers for increased research capacity include the effective deployment of the triangular impact of the training, mentorship and grantmanship integrated model. An important addendum is the creation of partnerships or collaborations to further drive capacity building. These are identified strategies frequently followed in order to increase research knowledge and skills of budding researchers and investigators, promote institutions relationships with funding and granting agencies, pooling and showcasing expertise and resources towards capacity enhancement and grants attraction based on the model being reviewed.

Fig.1: The training, mentorship and grantmanship integrated model for research capacity enhancement

Conclusion: Without a framework for nurturing a new generation of researchers via the training, mentorship and grantmanship integrated model, there would be a large gap between the competent old researchers/leaders, and the emerging researchers. The gap may cost the university (or any setting) so much. Hence, routine or periodic mentoring symposia, workshops, learning lab activities and exposures may be important to build research capacity, breed leaders of tomorrow in research and development in a university and similar settings.

Keyword: Research, Capacity enhancement, Training, Mentorship and Grantmanship

CMS-2023_048
Establishment of High-Fidelity Simulation Laboratory for Clinical Skills Learning at the University of Benin

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ABSTRACT

Background: Simulation is the process by which a procedure or process is mimicked with artificial objects for the purpose of learning a skill set in the laboratory before transferring the skills to real-life situations. While simulation is being increasingly used in teaching to improve the skills of health sciences in high-income countries, there has been limited evidence of its use in low- and middle-income countries. The objective of this presentation is to describe the process by which the Centre of Excellence in Reproductive Health Innovation (CERHI) established a high-fidelity simulation laboratory at the University of Benin in collaboration with the Harvard University Medical School (HMS).

Methods: CERHI consulted with officials in the Department of Pediatrics at the Boston Children Hospital in Boston, and a Memorandum of Understanding (MoU) was developed to establish a simulation lab similar to the prototype used at the Harvard Medical School. Equipment including adult and children manikins were purchased and transferred to Nigeria. Harvard clinical and technical officers visited Nigeria in January 2023 to install the equip and to train staff in the use of the manikins and in the actual simulation process.

Results: Over a period of five months (February 15 to July 15, 2023) a total of six clinical teaching staff and five technical staff underwent 18 training sessions in simulation writing and practice with online training support provided by the HMS. The sessions were attended by 18 postgraduate doctors, 43 medical students, and 7 nursing students. Six teaching staff have now been certificated by the HMS as simulation trainers, with more still receiving training sessions

Conclusion: We conclude that a high-fidelity simulation laboratory has been established and is now functional at the University of Benin with staff trained to use the facilities to provide clinical skills training health sciences undergraduate and postgraduate students. We believe that this facility would be useful to all departments and units in the College of Medical Sciences, with possibility that its application can be scaled up to similar institutions across the country.

Keywords: High-Fidelity Simulation Laboratory; Clinical Skills; University of Benin

CMS-2023_050
Assessment of Graduate Employability Status among Undergraduate Students at the University of Benin, Benin City

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ABSTRACT

Background: Nigeria has a predominantly young population with over three million young persons entering the labour market every year. Ensuring the employability of graduates is a critical concern for tertiary institutions especially due to the prevailing competitive job market and limited job opportunities.[1] Graduate employability encompasses the knowledge, skills, and attributes that enable graduates to secure meaningful employment and contribute effectively to the workforce.[2] Universities play a pivotal role in equipping students with the necessary employability skills that will prepare them for successful career transitions and a fulfilling work life.[3,4] Assessing the employability status and identifying its determinants among undergraduate students is crucial for developing targeted interventions and strategies to enhance their readiness for the job market. This study aimed to assess the knowledge, attitude and employability status of undergraduate students at the University of Benin, Benin City, and explore the factors influencing their employability.

Methods: A descriptive cross-sectional study was conducted among undergraduate students at the University of Benin, Benin City. The minimum sample size was calculated using the Cochrane formula for estimating a single proportion and a prevalence of 72.1%; the proportion of university students with graduate employability from a global survey.[5] A multi-stage sampling technique comprising of four stages was employed for respondent selection. Data was collected using a pre-tested interviewer-administered structured questionnaire, adapted from The Graduate Employability Skills developed for the Faculty of Management Sciences. Ethical clearance to conduct the research was obtained from the Research Ethics Committee of the University of Benin Teaching Hospital and informed consent was obtained from the respondents. Data was analyzed using IBM SPSS version 22.0. Univariate analysis was performed on sociodemographic and socio-economic data of respondents. Bivariate analysis was carried out using Chi-squared and Fisher's exact test to explore associations between socio-demographic variables, knowledge, attitude and employability status. The level of significance was set at $p < 0.05$.

Results: A total of 403 students with a mean age of 22.1 ± 3.3 years, participated in the study with a male to female ratio of 1.4:1. Although 364 (90.3%) had positive attitude towards graduate employability, majority 284 (70.5%) had poor knowledge of the various graduate employability skills. Majority, 342 (84.9%) of respondents exhibited a good employability status. Female students 148 (87.6%) had good employability status when compared with male students 194 (82.9%) while students in 300 level showed the highest percentage of respondents with good employability status (94.6%). In contrast, final year students in 400 level and 600 level demonstrated employability rates of 79.1% and 56.3%, respectively. Academic level was found to be significantly associated with graduate employability status ($p < 0.001$). The study highlighted leadership skills 309 (76.7%), analytical thinking 305 (75.5%), advanced IT skills 277 (68.7%) as well as communication and marketing skills 315 (78.2%) as attributes identified by respondents as essential for graduate employability.

Conclusion: The study findings indicate that a significant number of undergraduate students at the University of Benin, possess good employability status even though their understanding of the concept remained deficient It is thus imperative that tertiary institutions incorporate employability-focused initiatives and skill development programs into their curriculum to enhance the employability readiness of students and adequately prepare university graduates for successful entry into the competitive job market. Institutions of higher learning should also establish and maintain robust career service facilities to provide students with guidance on career planning, resumé building, interview skills and job search strategies.

Keywords: Graduate Employability; Undergraduate Students; Knowledge; Attitude.

Table 1: Socio-demographic characteristics and determinants of graduate employability status

Variable	Employability status		Test Statistic	p-value
	Good (n = 342)	Poor (n = 61)		
Age group (years)			Fisher's Exact = 6.949	0.107
15 – 19	67 (85.9)	11 (14.1)		
20 – 24	218 (87.2)	32 (12.8)		
25 – 29	44 (74.6)	15 (25.4)		
30 – 34	9 (75.0)	3 (25.0)		
> 35	4 (100.0)	0 (0.0)		
Sex			x^2 = 1.665	0.197
Male	194 (82.9)	40 (17.1)		
Female	148 (87.6)	21 (12.4)		
Level			Fisher's Exact = 29.872	<0.001
100	38 (88.4)	5 (11.6)		
200	74 (90.2)	8 (9.8)		
300	88 (94.6)	5 (5.4)		
400	91 (79.1)	24 (20.9)		
500	33 (86.8)	5 (13.2)		
600	18 (56.3)	14 (43.7)		
Marital status			Fisher's Exact = 1.250	0.274
Single	328 (84.3)	61 (15.7)		
Married	7 (100.0)	0 (0.0)		
Cohabiting	7(100.0%)	0 (0.0%)		
Knowledge of graduate employability			x^2 = 1.493	0.222
Good	145 (82.4)	31 (17.6)		
Poor	197 (86.8)	30 (13.2)		
Attitude towards graduate employability			x^2 = 0.091	0.545
Positive	305 (83.8)	59 (16.2)		
Negative	37 (94.8)	2 (5.2)		

Table 2: Binary logistic regression model for the determinants of graduate employability status

Predictor	B (Regression co-efficient)	Odds ratio	95% CI for OR		p-value
			Lower	Upper	
Age	-0.042	0.959	0.862	1.066	0.436
Sex					
Male	0.162	1.176	0.644	2.149	0.597
Female*		1			
Level					
100*	-0.002	0.998	0.995	1.000	0.057
200		1			
Marital Status					
Married	-20.252	0.001	0.001		0.999
Knowledge of graduate employability					
Good	0.181	1.198	0.670	2.142	0.542
Poor		1			
Attitude towards graduate employability					
Positive	-0.055	0.946	0.337	2.658	0.917
Negative		1			

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CMS-2023_051
Clinico-Pathological Profile of Childhood Orofacial Tumours Seen in a Tertiary Hospital in South-South Nigeria

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ABSTRACT

Background: Several orofacial tumours affect children, and these tumours pose a major health challenge mostly in the developing countries due to the associated morbidity and mortality, especially with the malignant tumours. The aim of this study is to determine the clinico-pathologic profile of childhood orofacial tumours seen in a tertiary health institution in South-south Nigeria.

Methods: A cross-sectional retrospective record review from the histopathology archives of the department of Oral and Maxillofacial pathology and Medicine of the University of Benin Teaching Hospital (UBTH), Benin City, Nigeria, over a 15-year period (2008 - 2022) was done. All the tumours of the orofacial region histopathologically diagnosed in patients 16 years and below were assessed and reviewed. Cases that had complete clinical and histopathological data were included while those without were excluded. Data such as age, gender, site and histopathologic diagnosis were entered into excel package and transferred into IBM SPSS 21 and analyzed. Inferential analysis of the association between the tumours and the age, gender and site were done using the Pearson's Chi-square test and the level of significance set at $p < 0.05$

Results: A total of 118 orofacial tumours in children were retrieved from which 105 cases with complete data were selected in this review. Of these 105 cases, there were 61 males and 44 females giving a male to female ratio of 1.4:1. The age range was 2 to 16 years with a mean age of 9.55 ± 3.97 years. The peak age of the tumours was observed in the 13 to 16 years age groups 31 (29.5%) with the highest frequency in patients that were 14 years old 13 cases (12.4%). The mandible 43 (41.0%) was the primary site most commonly affected followed by the maxilla 18(17.1%). Seven cases (6.7%) were multiple orofacial sites lesions. The Lymphomas 34 (32.4%) were the most common tumours observed consisting mostly of the Burkitts lymphoma 22 cases (21.1%). The second most common tumour was ameloblastoma 26 (24.8%) while the lease cases include rhabdomyosarcoma with 1 case (1.0%). The lymphomas were seen mostly among the 5 to 8 years age group 19(55.9%) with 73.5% of them occurring in males (n = 25) and affecting mostly the mandible 13(38.2%). There was significant association between the histopathologically diagnosed orofacial tumours with the age groups (p = 0.001), the gender (p = 0.006) and the site (p < 0.001).

Conclusion: This review showed that the orofacial tumours seen in children in our environment are diverse. The most prevalent among the tumours was the Lymphomas and the Burkitts type was the most common lymphoma seen. Overall, the tumours were more frequent in males, mostly from age 5 years and above especially the 13 to 16-year age groups. The mandible was the most common site involved. Awareness of these diverse tumours in children by clinicians would assist with timely identification of cases and actions instituted to adequately manage them.

Keywords: Childhood; Orofacial; Tumours; Histopathological diagnosis; Benin City

Table 1: Distribution of orofacial tumours among the children

Variable	Frequency (n=105)	Percent
Age groups (years)		
0 – 4	14	13.3
5 – 7	30	28.6
8 – 12	30	28.6
13 - 16	31	29.5
Site		
Mandible	43	41.0
Maxilla	18	17.1
Face	9	8.6
Gingiva	8	7.6
Palate	5	4.8
Parotid	4	3.8
Submanandibular	4	3.8
Lip	3	2.9
Cheek	3	2.9
Oropharynx	1	1.0
Multiple sites	7	6.7

Table 2: Types of tumours by histopathologic diagnosis

Histo-pathologic diagnosis	Frequency (n=105)	Percent
Malignant Salivary Gland tumours (Adenocarcinomas)	3	2.9
Lymphoma	34	32.4
Ameloblastoma	26	24.8
Adenomatoid Odontogenic tumour	5	4.8
Central Giant Cell Granuloma	5	4.8
Lymphangioma	5	4.8
Haemangioma	4	3.8
Squamous Cell Carcinoma	4	3.8
Adenoma (Pleomorphic Salivary adenoma)	4	3.8
Malignant Fibrous histiocytoma	3	2.9
Lipoma	2	1.9
Chondrosarcoma	2	1.9
Peripheral Ossifying Fibroma	2	1.9
Calcifying Cystic Odontogenic tumour	1	1.0
Langerhans Cell Histiocytosis	1	1.0
Neurofibroma	1	1.0
Rhabdomyosarcoma	1	1.0
Round Blue Cell tumour	1	1.0
Wegener's granulomatosis	1	1.0

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CMS-2023_052
Exosomes as Biomarkers of Diseases in Forensic Medicine

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ABSTRACT

Background: Exosomes, nanosized extracellular vesicles secreted by various cell types, have emerged as promising biomarkers in forensic medicine for the detection and characterization of diseases. This study explores the significance of exosomes as diagnostic tools within the realm of forensic science. Exosomes contain a cargo of proteins, nucleic acids, and lipids reflective of their parent cells' physiological state. As such, they offer a unique window into the molecular landscape of diseases, making them invaluable for disease identification and progression assessment in forensic cases.

Methods: In conducting this study, a comprehensive electronic literature search using PubMed, ScienceDirect, Google Scholar, and Google search for similar and related works were used, and all works meeting the subject matter were considered, including; reviews, meta-analyses, retrospective studies, observational studies, organization recommendations, and original articles.

Results: Recent research demonstrates that exosomes finds huge potential as robust indicators of various conditions, including cardiovascular diseases, neurodegenerative disorders, cancers, and infectious diseases. In forensic medicine, the use of exosomes as biomarkers holds great promise. Their stability in bodily fluids, such as blood, urine, and saliva, even under adverse conditions, makes them ideal candidates for postmortem analysis. The diverse information encapsulated within exosomes can aid in the determination of cause and manner of death, identification of toxicological agents, and assessment of disease progression, contributing to a more comprehensive understanding of the deceased's medical history. Moreover, advancements in exosome isolation, characterization, and analysis techniques have paved the way for their integration into routine forensic investigations. High-throughput technologies, such as next-generation sequencing and mass spectrometry, enable thorough profiling of exosomal contents, allowing for accurate disease classification and subtyping.

Conclusion: Exosomes represent a revolutionary frontier in forensic medicine, offering a non-invasive and comprehensive approach to disease detection and characterization. Their potential as biomarkers holds the key to enhancing the accuracy and scope of forensic investigations, ultimately providing crucial insights into the health status and medical history of individuals in both legal and medico-legal contexts.

Keywords: Exosomes, Exosomes in forensic medicine, and Exomes Biomarkers.

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CMS-2023_053
Forensic Psychology: The effect of TV programs on behavioral pattern

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ABSTRACT

Background: Human behaviour is holistically affected by the nature (genetic makeup) and nurture (society, culture, social processes etc.) effects. While the genetic makeup of an individual influences an individual's personality, the exposure to certain environmental conditions determines their behavioral patterns. Exposure such as music, TV programmes, magazines etc. are known to have an effect either positively or negatively on the behavior pattern of an individual. This study aims to highlight the effect on the exposure of CSI- TV programs and how it influences an individual's behavior.

Methods: This work relied on various online journals like PubMed, research gate, science direct and Google scholar for related and similar works on the subject matter.

Results: Over the last decade TV programmes have brought about an increase in the awareness of crime investigation using forensic tools among population of a society. This knowledge help to create sensitization on the need for protection of crime scene, chain of custody, the impact forensic evidences have during Investigation and proceedings in court and while this is a good thing, the resulting effect of this knowledge have brought sensitization on not just the general public but to criminals which gives them technical know-how on how to evade forensic techniques. Also Findings shows that exposure to some criminal scenes i.e. murder scenes over time might affect the individuals psychology negatively increasing the tendency to crime.

Conclusion: Sensitization of population on forensic Investigation through TV programmes has brought about the yin and yang effect whereby the awareness of forensic in a society is raised but also exposes the population to scene that affect a person's behavioural pattern. This review therefore, draws a need for researchers and educators to continuously unravel the underlying factors between reality and beliefs that the CSI effect exists.

Keywords: CSI-TV programs; Human behavior.

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