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Theme: Expanding Partnerships to Sickle Cell Disease and Cancer Research

Book of Abstracts

Evaluation of the Implementation of Cervical Cancer Screening Among Women Living with HIV (WLHIV) in Nasarawa State, North Central Nigeria.

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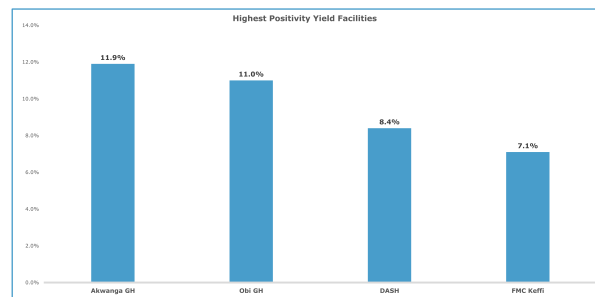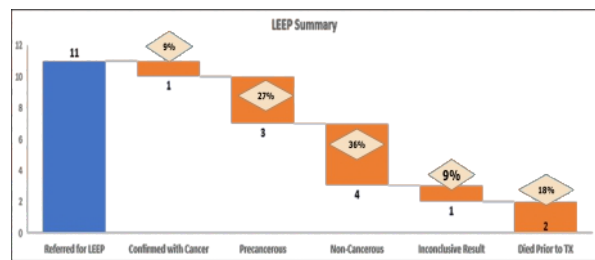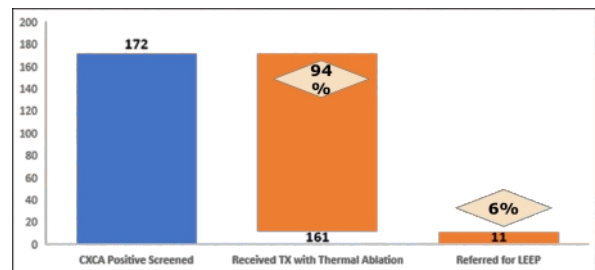
Background

Cervical cancer is the second most common cancer in women in Nigeria. HIV predisposes (by six folds) clients to pre-invasive lesions, which gradually develop into cancer. Early detection and treatment are the primary prevention approaches to cervical cancer control. This necessitates the need for prompt screening of Women Living with HIV (WLHIV). The study evaluated the prevalence of pre-cancerous lesions and treatment uptake among WLHIV

Methods

This cross-sectional study involved the review and analysis of cervical cancer screening data across 26 facilities providing cervical cancer screening services in Nasarawa State between October 2021 and September 2022 and evaluated the prevalence of pre-cancerous lesions among WLHIV. Visual inspection with Acetic Acid (VIA) and Lugol's Iodine (VILI) staining methods of screening were utilized, and corresponding treatment of pre-cancerous lesions using thermal ablation was done.

Results

A total of 4302 WLHIV aged 25–49 years were screened for cervical cancer, of which 172 (4.0%) screened positive. Approximately 93.6% (161/172) received pre-invasive treatment with thermal ablation, while 6.4% (11/172) were referred for the Loop Electrosurgical Excision Procedure (LEEP). Of those referred for LEEP, 1/11 (9.1%) was confirmed with cancer and is currently undergoing treatment; 3/11 (27.3%) turned out to be precancerous and had thermal ablation; 4/11 (36.4%) were non-cancerous and treated for opportunistic disease; 1/11 (9.1%) had an inconclusive result and was rescheduled for a Pap smear; and 2/11 (18.2%) died prior to treatment.
The cervical cancer screening positivity rate across the healthcare facilities ranged from 0.0–11.9%, with the highest rates being 11.9%, 11%, 8.4%, and 7.1% in Akwanga General Hospital (GH), Obi GH, Dalhatu-Araf Specialist Hospital, and Federal Medical Center Keffi, respectively.

Cervical Cancer screening positivity rate across the healthcare facilities/Priority LGAs

Conclusion

The implementation of cervical cancer screening in the HIV program provides the opportunity for early detection and treatment of precancerous lesions, potentially reducing the burden of cervical cancer among WLHIV. This study points out the need for a strategic scale-up of cervical cancer screening services and highlights the need for further studies to explore the reasons for the high incidence in high-burden facilities and their respective LGAs to guide targeted interventions

Assessment of Cervical Cancer Screening Among Women Living with HIV/AIDS at Federal Medical Centre Makurdi, Benue State, North Central Nigeria

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Objective:

To determine the knowledge, awareness, utilization, and barriers to accessing cervical cancer screening among HIV-positive women.

Methodology:

This study was a descriptive cross-sectional study conducted in the ART Clinic of the Federal Medical Centre (FMC), Makurdi. Ethical approval was obtained from the Research and Ethical Committee of the Hospital. A total of 156 HIV positive women between the ages of 15-65 years who consented, participated in the study. Interviewers guided online questionnaire (google form) was used to collect data. Data was analyzed and presented in tables and charts. The factors affecting the uptake of cervical screening among HIV-positive women were assessed using bivariate analysis and logistic regression analysis.

Results:

Only 7(4.5%) of the study participants were familiar with the term cervical cancer and majority 138(88.5%) were not aware that HIV/AIDS increases the risk factor for cervical cancer. Most 146(93.6%) of the study participants had no knowledge of any cervical cancer screening methods and 62(39.7%) had ever screened for cervical cancer. Half (31) of those who screened were in the age category of ≥ 40 years. Only 1(0.6%) of the study participant had taken HPV vaccine. This study did not identify any barriers to accessing cervical cancer screening.

Conclusion:

The finding from this study shows that there is a poor knowledge of cervical cancer screening methods and uptake of cervical cancer screening among women with HIV. Therefore, there is a need for more public awareness creation and education on cervical cancer and screening especially among HIV-positive women.

Harnessing The Energy of Adolescents to Enhance HPV Vaccine Uptake in Nigeria: Experience from Participating in HPV Designathon.

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Background:

Youth are full of energy and ideas that can be put to good use if given the right guidance and opportunity to express their energy. The energy of youth can be of immense benefit in combating the misinformation around HPV vaccine given that the vaccine is primarily targeted at adolescent girls. With proper training, youth can effectively engage with younger peers by leveraging their unique relatability. This involvement introduces a fresh, innovative approach. Our shared experiences facilitate better communication and connection. This report is a documentation of youth's perspective of scalable lessons from their participation in an HPV designathon.

Aims:

To highlight the untapped energy of adolescents that can be harnessed to improve HPV vaccine uptake.

Methodology:

The process that led to 5 adolescents forming advocacy group and the subsequent efforts towards improving HPV vaccine uptake in their community was documented. The experience of the group was used to develop a model for positive youth engagement in Nigeria.

Result:

The average age of the 5 members of the unboxed team was 19.5yrs (range 19 to 20yrs) with male: female ratio of 2:3. The HPV designathon competition stimulated our interest to be part of a bigger project. The training provided us with the requisite knowledge and understanding of how to channel our energy for cervical cancer prevention. We realized that our initial project was unrealistic because it was planned with pure youthful energy and have since refined our strategy through mentorship.

Conclusion:

Our experience confirmed that youth represent raw energy waiting to be harnessed for community development. The strategy to harness this energy will vary from community to community but the common denominator is to stimulate interest of the youth and provide them with necessary tools to express themselves.
Acknowledgement: 4GW, NIMR, 4CbyC.

Exploring Integrated Cervical Cancer Screening for Women Living with HIV (WLHIV) to Increase Uptake of Cervical Cancer Screening Amongst All Eligible Women in Nigeria

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Background:

Women living with HIV (WLHIV) face a significantly higher risk of cervical cancer. Many HIV programs in Nigeria now offer cervical cancer screening to WLHIV. This study explores how these existing programs could be leveraged to increase cervical cancer screening uptake towards achieving cervical cancer elimination target in Nigeria.

Aims:

To highlight opportunities for expanding cervical cancer screening coverage for both WLHIV and the general population.

Methodology:

Key informant interviews were conducted with stakeholders involved in implementing cervical cancer screening for WLHIV to identify potential opportunities for a scaling-up the screening services to general population.

Results:

The USAID-funded Accelerated Control of HIV Epidemic (ACE) program requires all HIV programs in Nigeria to offer cervical cancer screening to WLHIV. The ACE program is been implemented across the whole country thereby providing a platform that can be leveraged for a national cervical cancer screening program. However, implementation strategies vary across the country. The concept of leveraging existing HIV programs for broader screening was well received by stakeholders. The main challenge identified was ensuring program targets are met while adhering to funding agreements.

Conclusion:

The existing integrated cervical cancer screening services for WLHIV offers unprecedented opportunities to increase screening coverage in the general population. However, wider consultation is needed to develop a mutually beneficial protocol for policy implementation

Outcome of a Retrospective study on Cervical Cancer Screening among Women Living with HIV in some selected Healthcare facilities in FCT

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Introduction:
Cervical Cancer is the 4th commonest cancer in women globally with around 660,000 new cases and about 350,000 deaths in 2022 (WHO). The highest rates of cervical cancer incidence and mortality are in low and middle-income countries such as Nigeria.

Objectives:
The study aims to assess the outcome of Cervical Cancer Screening among Women Living with HIV across 54 facilities in FCT.
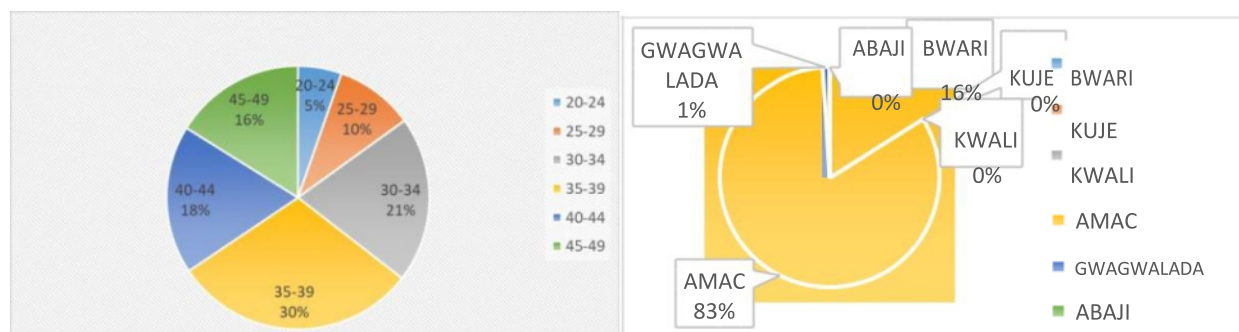
Methods:
Data was abstracted from facility Cervical Cancer Screening Registers with a list of women screened from October 2022 to September 2023. The outcome were negative, precancerous lesions and suspicious for cancer among women (20-49 years) living with HIV. Results were presented in charts and percentages.

Results:
The target was to screen 7546 but 7680 accepted screening (102%), 93 women had precancerous lesions (0.01%), 80 (86%) were treated, 10 (10.7%) referred for further evaluation, 2 (2.2%) declined treatment, and 1 (1.1%) declined to seek spouse's approval. 28 (30.1%) WLHIV between 35-39years had the highest proportion of precancers while 5 WLHIV aged 2124 years had the lowest at 5.4%. By LGA, AMAC had the highest of 77 (82.8%) while Kuje, Abaji and Kwali LGAs recorded no client with precancerous lesions.

Screening yield by age band and LGA:

Conclusions of the study:
Early Cervical cancer screening and treatment of WLHIV increases acceptance and reduces mortality. It is important to further understand factors responsible for high proportions of precancerous lesions among WLHIV in AMAC.

Anti- Carcinogenic effects of Amygdalin on the Expression of BRCA-1, and SOCS-1 genes, P53 and P27 in Albino Rats induced with Breast Cancer

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Background:

Breast cancer is the most frequent Cancer in women with about 2.5 million cases and with 10% death annually. Most available synthetic chemotherapeutic agents have not fulfilled the needed expectations, hence, there is a need to produce other treatment options. Aim/Objectives: The research aimed to evaluate the anti-carcinogenic effects of Amygdalin on the expression of BRCA-1 and SOCS-1 genes, P53 and P27 antigens in albino rats induced with breast cancer.

Materials and Methods:

Powdered Manihot esculenta tubers were subjected to Microwave-assisted extraction techniques and High-powered liquid chromatography, followed by fractionation and GCMS to obtain pure Amygdalin. Twenty-five (25) albino rats were divided into five (5) groups of five (5) rats each. All the groups were induced with 65mg/kg b.w.t. of 7,12, Dimethyl benzene (a) anthracene, except Group I (normal control) and observed for four weeks for mammary cancer development. Group III, was treated with 50mg/kg b.w.t of cyclophosphamide, group IV and V were treated with 100mg and 200mg of Amygdalin, respectively and observed for 4 weeks. The rats were sacrificed 24 hours after the last treatment and the sera was collected in sterile bottles. The expression of BRCA-1 and SOCS-1 genes, P27 and P53 were assessed using qPCR and ELISA method respectively.

Results:

There was statistical significant upregulation in the expression of BRCA-1 gene ($P \leq 0.05$), in grp II, and IV when compared with grp I and V, while P27 and P53 were statistically increase ($P \leq 0.05$) in grp I,III and V when compared to grp II and IV. There was no statistical significant difference in Grp I and V. BRCA 1 was down-regulated in grp I and grp V while P27 and P53 were increase in I and V.

Conclusion:

This study shows that Amygdalin possessed strong anti-carcinogenic effects and may be used as a treatment option in breast cancer management.

Keywords: Amygdalin, DMBA, Breast cancer, BRCA-I, SOCS-1, P27, P53 and Cyclophosphamide.

Civil Society Organizations and Cervical Cancer Interventions: Insights from the National Human Papillomavirus Virus (HPV) Vaccination Programme to Increase Vaccine Demand and Uptake in Nigeria.

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Objectives:

In October 2023, Nigeria launched a national campaign that introduced the single-dose Human Papillomavirus (HPV) vaccine in Nigeria. This implies that the HPV vaccine was now accessible to girls between the ages of 9 to 14. However, increasing HPV vaccine demand and uptake would require intensive community engagement in collaboration with Civil Society Organizations (CSOs). The national campaign has proven to be a highly effective intervention strategy in preventing cervical cancer. However, the roles of CSOs in expanding outreach, generating demands and increasing uptakes of the vaccine are still under-researched in Nigeria. This study, therefore, examined the impact of CSOs on HPV vaccine demand generation and uptake.

Methods:

The study utilized a three-pronged approach (baseline survey, sensitizations and end-line survey) to examine CSO's impact on demand generation and uptake of the HPV vaccine in Jos North Local Government Area in Plateau State Nigeria. A descriptive baseline and end-line surveys were undertaken among a total of 914 purposively selected respondents. Sensitization activities were carried out among multi-stakeholders on cervical cancer and HPV Vaccination.

Results:

At both baseline and end-line surveys, the primary respondents were females aged 9 to 14 years. At baseline, 91.43% had not heard of HPV, and 86.85% were unaware that HPV causes cervical cancer, 80.88% were unaware of cervical cancer symptoms, and 76.1% were unfamiliar with their risk factors. Furthermore, 93.03% had not heard of the HPV vaccine, 96.22% had never received it and 67.93% noted paucity of information on the HPV vaccine and cervical cancer. Consequently, Inspire World International Foundation, a CSO, launched sensitization campaigns reaching 32,420 individuals through 101 activities. By the end-line survey, 88.16% had received the HPV vaccine. Awareness significantly improved, with 95.17% understanding what HPV is, 94.44% knowing about cervical cancer, and 92.03% recognizing that HPV causes genital warts and cervical cancer. Additionally, 82.85% became aware of their risk factors, and 83.82% believed there was sufficient information on HPV and cervical cancer.

Conclusion:

CSOs significantly increase vaccination uptake, thereby, reducing the burden of cervical cancer and improving public health outcomes. We recommend increased partnerships, capacity-building initiatives and funding for CSOs. This will ensure CSOs remain equipped to effectively engage communities to deliver accurate culturally appropriate health information, address misinformation, and build trust among community members. These will strengthen healthcare delivery and empower communities to make informed decisions about their health.

Keywords: Civil Society Organization, HPV Vaccination, Cervical Cancer, Demand Generation and Uptake, Nigeria.

A Systematic Review and Meta-analysis of Cervical Cancer Occurrence and Risk among PLHIV in sub-Saharan Africa

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Background:
Globally, cervical cancer (CC) remains a leading cause of tumour-related mortality among women living with HIV (WLHIV). The pool prevalence and risk of CC among WLHIV in sub-Saharan Africa (SSA) is unknown. Thus, we conducted a systematic review and meta-analysis to evaluate rate of CC occurrence and associated risk among WLHIV in SSA.

Methodology:
We systematically searched PubMed, Web of Science and Google scholar databases to retrieve and review original articles published in English between 2019 and 2024 in SSA. Articles that did not report CC prevalence or it risk factors or both among WLHIV were excluded. Meta-analysis evaluated the pooled prevalence, risk of CC and heterogeneity. Statistical significance was set as $p<0.05$. Forest and funnel plot assessed CC risk variability and the small study effect respectively. Meta-regression examined precision.

Results:
Only 12/3196 articles met the inclusion criteria and comprising a total of 3193 women participants aged 15-93 years. Prevalence of CC among WLHIV ranges from 9.3% to 36.4% with pooled estimate of 17.9% in SSA. Common risk factors were; age at first sexual debut [OR=2.88, 95%CI=1.79-5.01], having multiple sexual partners [OR=2.94, 95%CI=1.47- 5.84], being a sexual worker [OR=4.98, 95%CI=2.15-9.96], history of sexually transmitted infection [OR=4.52, 95%CI=1.49-13.6], CD4 counts<200cell/mm3 [OR: 11.33, 95% CI: 2.88-24.58]. There is significant (p<0.001) heterogenicity with statistics $I2 = 88.93\%$. Precision lies within 0.12 and 0.33 standard error, and the small study effect was insignificant.

Conclusions:
We found high rate of CC among WLHIV in SSA. Lifestyle, sexual and reproductive factors influenced the risk of CC. Sex education and risk communication counselling program on multiple sexual partnership should be promoted. Effective primary prevention and treatment of precancerous lesion should be prioritized among WLHIV particularly those most at risk of opportunistic infection to reduce CC burden.

Keywords: Cervical Cancer, WLHIV, Risk, Systematic Review, Meta-Analysis, SSA

Co-infection of high-risk HPV with other STIs among women living with HIV in Jos, Nigeria

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Objective:
Women living with HIV (WLWH) have a higher risk of acquiring other infections due to their compromised immune systems. Human papillomavirus and other STIs are particularly concerning. This study was carried out to determine the association between HPV infection and other STIs among HIV positive women with and without cervical precancer.

Methods:
We detected and genotyped HPV DNA from cervical swab using HPV 28 Anyplex II (Seegene). For the PCR identification of fourteen non-ulcerative and ulcerative STIs, we used Allplex™ STI Essential Assay (Seegene) and Allplex™ Genital ulcer Assay (Seegene) respectively. A total of 101 women were enrolled into this study.

Results:
The mean (SD) age of the study participants was 49.9(10.1) years. The overall HPV prevalence was 65.4 (66/101). Among these, hrHPV infection occurred in 69.0% of agegroup >40 years and 31.0% in age-group ≥40 years. Approximately 42% of hrHPV positive women were co-infected with at least one STI (p=0.006). Having multiple STI was associated with hrHPV infection (p=0,019 for multiple essential STI and p=0.007 for multiple genital ulcers causing STIs). Univariable analysis showed hrHPV association at 95% CI with any essential STI (OR: 3.0, CI = 1.35-6.96, p=0.008), single STI (OR:5.5, CI= 1.53-26.51, p=0.016), any genital ulcers microbe (OR:3.5, CI=1.57-8.21, p=0.003), HSV 1 (OR:3.4, CI=1.12-12.84, p=0.043), Lymphogranuloma venereum (OR:3.4, CI-1.28-9.13, P=0.017) and having single ulcers causing microbe (OR:4.1, CI=1.6-11.1, p=0.004). In multivariate models adjusted for age, parity, HIV duration and cervical neoplastic lesion, the odds ratios comparing hrHPV-positive to hrHPV-negative women, was 10.4 (95% CI 3.37-38.94, p < 0.001) for any genital ulcers causing microbial infections.

Conclusion:
High-risk HPV infection was associated with the presence of other sexually transmitted infections. Detecting and treating these STIs could have impact on cervical hrHPV persistence and disease progression.

Keywords: Persistent hrHPV infection, essential STIs, genital ulcers causing STIs, HIV-positive women

Genetic Susceptibility in Bladder Cancer: Insights from a Systematic Review of GWAS

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Background:
Bladder cancer (BC) is the most prevalent cancer of the urinary tract globally, with over 550,000 new cases annually. Despite its growing incidence and mortality rates, particularly in Africa, bladder cancer has received limited research focus. Recent advancements in molecular research have revolutionized its diagnosis and treatment.

Objectives:
This study aimed to identify genetic susceptibility loci associated with bladder cancer by systematically reviewing previous Genome-Wide Association Studies (GWAS).

Methods:
Comprehensive literature searches were conducted across PubMed, Google Scholar, and relevant genetic databases, focusing on bladder cancer GWAS studies from 2000 to November 2022. The review followed PRISMA guidelines, and study credibility was assessed using the Newcastle-Ottawa Scale.

Results:
The review identified chromosome 18q12.3 as the most susceptible to bladder cancer, with four notable polymorphisms: rs7238033, rs10775480, rs11082469, and rs17674580. Chromosome 5p15.3 was the second most susceptible, with three polymorphisms: rs2736098 and two instances of rs401681.

Conclusion:
Significant loci were identified, but understanding of genetic susceptibility to bladder cancer remains limited. Larger cohort studies are necessary to uncover additional polymorphisms and enhance our approach to bladder cancer.

Keywords: Bladder cancer, Genome-wide association studies (GWAS), polymorphism, systematic review, public health impact

Advancing Bladder Cancer Detection: A Systematic Review of Diagnostic and Prognostic Biomarkers

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Background:
Bladder cancer is one of the most prevalent malignancies worldwide. Despite its high incidence, public awareness remains low, and the condition has received less research attention compared to other cancers. Over the past decades, patient outcomes and treatment strategies have remained largely unchanged, with cystoscopy being the primary method for detecting bladder cancer. This repeated procedure is uncomfortable and costly.

Objectives:
This study aims to identify potential molecular biomarkers for bladder cancer to improve tumor detection and reduce reliance on cystoscopy.

Methods:
A systematic review was conducted, searching for articles on bladder cancer biomarkers in PubMed, ScienceDirect, Google Scholar, and Cochrane databases. Eligible studies underwent title/abstract screening and full-text review, resulting in the inclusion of twenty studies.

Results:
The review identified several gene product biomarkers, including TEAD4, TPM1, TPM2, SKA3, EO1, HYAL3, MTDH, EPDR1, hTERT, KRT7, SW, ARHGAP9, XPH4, OTX1, BUB1, and Usp28. Additionally, protein product biomarkers were identified, such as A1AT, APOE, AG, CA9, IL8, MMP9, MMP10, PAI1, SCDI1, SDC1, VEGFA, CD73, TIP2, CXCL5, PCAT6, and NCR3LG1 (B7-H6).

Conclusion:
This study highlights the potential of various gene and protein biomarkers for detecting bladder cancer. Further research is necessary to validate these biomarkers' diagnostic and prognostic potential in clinical settings.

Keywords: diagnostic, prognostic, molecular biomarkers, bladder cancer, systematic review

Cancer Patient and Caregiver Perspectives on Laboratory Services at Oncology Clinic: Satisfaction and Challenges.

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Background:

Patient satisfaction is a key indicator of quality healthcare services. The efficiency of laboratory services is crucial for care and satisfaction, particularly for ill patients managed in oncology and radiotherapy. The primary objectives were to assess the challenges encountered and to evaluate overall satisfaction with the lab services among patients and their caregivers receiving outpatient palliative care services at NHA.

Methods:

A total of 100 participants, comprising cancer patients and their caregivers, were interviewed. Data were collected on demographic characteristics, lab-related challenges, and satisfaction levels. R statistical package was used to calculate mean, standard deviation, and median values for numeric variables. Frequencies and percentages were calculated for categorical data.

Results:

The study population had a mean age (SD) of 51.9(12.3) years. The majority, 64(64.0%) were females. The majority of participants interviewed were in the oncology department 76(76.0%). Sixty (83.3%) stated that their samples were collected in the NHA lab. Regarding challenges, 19(29.2%) indicated that laboratory staff were unavailable to collect samples, 26(40.6%) mentioned that it was due to the unavailability of reagents, 45(67.2%) said the lab was too far from the oncology unit, 23(34.3%) encountered unprofessional staff and 50(75.8%) experienced delays in receiving lab results Overall, 56(93.3%) reported difficulties using the NHA lab, and 90(90.9%) viewed the cash payment system favourably. The mean satisfaction score (SD) was 14.4(4.0). Only 45 participants (62.5%) reported being satisfied.

Conclusion:

Most participants experienced delays in receiving results and reagent unavailability - with 2 out of 3 satisfied with laboratory services. The cash payment system was positively received. Overall satisfaction with the lab services was low. To optimise laboratory services for patients with cancer: ensure adequate staffing levels to manage sample collection efficiently, maintain a steady supply of necessary reagents and implement measures to manage patient flow. Continuous assessment of the quality of laboratory services is paramount to build patient trust.

Differences in Cancer Survival by Age, Stage of diagnosis and Cancer Registry in Nigeria: Findings from the IMPACT Study

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Background:

Survival from cancer across Nigeria is mostly estimated or based on information from highly selective case series. The Improving Population Level Stage at Diagnosis and Estimation of Cancer Survival in Nigerian Cancer Registries (IMPACT) Study assessed stage at diagnosis and cancer survival at the population level in a multi-centre cancer registry study in Nigeria.

Objectives:

In this study, we aimed to retrospectively stage cancer at the population level, using a simplified staging tool for cancer registries, the essential TNM tool, and to follow-up cancer cases and estimate overall and site-specific survival of the four most common cancers (Breast, Cervical, Prostate and Colo-rectal cancers) in Nigeria.

Methods:

Data was obtained from a random sample of 1000 cases diagnosed between 2014 and 2018, from five Nigerian PBCRs (Abuja, Calabar, Ekiti, Enugu, and Ibadan), four of which are current members of   the African Cancer Registry Network (AFCRN). Of these, 997 (99.7%) were included in the survival analysis. We estimated 5-year overall survival by cancer site, registry, stage, age at diagnosis and report on hazard ratios adjusting for confounders.

Results:

The mean age at diagnosis was 57.7 (14.8) years, with observed mortality varying from 30.4% to 57.0% across the registries. Among patients with known stage, 66% were diagnosed in late stage (III/IV). Overall, the median survival time was 3.72 years, with significant variations by registry, cancer type, and stage. Late-stage diagnosis significantly reduces survival, with overall HR 1.76 (95% CI: 1.38–2.24); for breast 2.12 (1.27–3.54), cervix 1.88 (1.18–3.01), prostate 1.71 (0.98–2.99), and colorectal 1.37 (0.82–2.27). Survival is particularly lower in patients aged ≥70 (HR 1.55, 95% CI: 1.14–2.12) and those registered in the Ibadan CR, and diagnosed with prostate cancer (HR 14.49, 95% CI: 6.91–30.36).

Conclusions:

Late-stage diagnosis was a common feature across all cancer types and later stage at diagnosis and older age at diagnosis were associated with significantly reduced survival. These findings underscore the importance of collecting cancer stage information, and the need for targeted interventions for early detection and down-staging cancers to improve survival rates in Nigeria..

Reducing the burden of cancers with a focus on breast and cervical cancers among women and other sub-populations in nigeria & Sub-Saharan Africa: A mixed method study

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Background:

Cancer is responsible for an estimated 533,000 deaths in Sub Saharan Africa (SSA) annually. Breast (BC) and Cervical Cancer (CC) contribute significantly about 22.7% and 16.4% respectively to the cancer burden in SSA.

Objectives:

The Network of Oncology Research in Africa (NORA) is focused on cancer registration, screening and early detection of breast and cervical cancers with the overall aim of cancer surveillance and survival estimation of common cancers and establishing evidence-based BC and CC screening and treatment pathways in SSA. NORA will also provide masters and doctoral level training for young scientists to enable them take on long-term applied research within the framework of national strategies for cancer control.

Methods:

This project will be implemented in FCT, Rivers and Nasarawa in Nigeria. For cancer surveillance and cancer survival estimation, data abstraction of 18,080 cancer cases comprising seven cancers (breast, cervical, ovarian, prostate, colorectal, bladder, liver) from 35 cancer registries across SSA is planned. We will also assess current practices, and barriers to BC and CC screening uptake at the PHC level in the 3 States. Data will be entered into REDCap and analyzed using STATA MP 17 and Dedoose. The study will last from 2023-2028 and results will be presented in tables, figures and text.

Expected Outcome/Results:

So far, 2977 of 18,080 cancer cases have been abstracted from seven of the thirty-five cancer registries across SSA. Advocacy and community engagement activities are currently ongoing to understand the role of community gatekeepers in influencing women's willingness to seek breast and cervical cancer screening in rural communities in Nigeria.

Conclusion:

The overall goal is to reduce the mortality and morbidity of cancers, especially CC and BC. Futuristically, improved data completeness and quality in cancer registries can enable policy makers to develop strategies that will reduce the burden of the disease in SSA.

Impact of Community Advocacy Programs in Local communities in Sub-Saharan Africa.
Case study: The Network for Oncology Research in Sub-Saharan Africa (NORA) project in Nigeria

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Background:
Breast and Cervical cancers are the leading causes of deaths among women in sub-Saharan Africa. Early detection and treatment are paramount in reducing cancer related mortality and morbidity. The NORA project is committed to establishing evidence-based Breast Cancer (BC) and Cervical Cancer (CC) screening and pathways to treatment in Sub-Saharan Africa.

Objective:
The advocacy program was set out as a tool to engage and sensitize stakeholders and community gate keepers on BC and CC in select rural areas in Nigeria.

Methodology:
The engagement, spanning two (2) weeks across three (6) local communities in Nigeria, involved a multi-faceted approach encompassing didactic lectures, collaborative discussions and sensitizations. The sessions involved a three-hour didactic and evidence-based sensitization lecture delivered by a NORA expert followed by one hour of engagements, further sensitizations and feedback from the participants. The program impact evaluation employed a mixed-methods approach, integrating quantitative and qualitative data using statistical methods.

Result:
The stakeholders and community gate keepers that were sensitized (N=76) were mostly religious leaders, traditional leaders, traditional healers, community influencers, women leaders, and support groups from local communities in Abuja, Nasarawa and Rivers states in Nigeria.
The advocacy on the NORA project reached a diverse group of stakeholders and community gatekeepers.
A significant majority (93%) reported increased knowledge about BC and CC.
The majority (66%) felt they were quite or very knowledgeable, while a smaller group (27%) felt moderately knowledgeable.

Conclusion:
The impact evaluation findings demonstrate that the NORA program in Nigeria can serve as an effective mechanism for advocacy and sensitization. Lessons learned and knowledge garnered can serve as valuable guidance to BC and CC advocacy campaigns in rural communities in Sub Saharan Africa.

Association between viral load and pre-cancerous lesions or lesions suspicious for invasive cervical cancer among Women Living with HIV in 3 States in Nigeria.

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Introduction

Cervical Cancer is the second commonest cancer in Nigeria with a 6-fold preponderance among Women Living with HIV (WLHIV). HIV is known to worsen the immune states, thus predisposing to reduced HPV clearance and increased progression to cervical cancer among WLHIV. Given the role of viral load in immune state, this study assesses the relationship between VL and the type of cervical cancer lesion (i.e., precancerous or suspected cancer lesions) among WLHIV in Nigeria.

Methodology

Using the cervical screening register, we identified WLHIV with precancerous lesions and lesions suspected of cervical cancer following visual inspection with acetic acid and visual inspection with Lugol's Iodine across three States in Nigeria (i.e., Federal Capital Territory, Rivers, and Nasarawa states) within a period of 12 months (October 2022 – September 2023) and abstracted their viral load status at the time of screening. We measure the median VL across both groups of cervical lesions (i.e. precancerous and suspected for cancer lesions) and compared using the Wilcoxon rank sum test. Data was analyzed using Stata version 18.

Results

Among the 226 WLHIV with positive cervical cancer screening outcome, 204 exhibited precancerous lesions and 22 were identified as suspected for cancer. When stratified across the three states, Nasarawa state had the highest number of WLHIV (i.e., 99) with precancerous lesion/suspected cancer lesions. The median age across the states varied between 35 and 38 years (see table) while the proportion with unsuppressed viral load ranged between 36.7% to 45.1%. However, there was an association between VL and type of cervical cancer lesion among WLHIV in Nasarawa state only (pvalue – 0.021).

Conclusion:

Viral load is seemingly associated with type of cervical cancer lesions. However, additional studies are needed to explore this further. Nonetheless, we recommend cervical screening for all WLHIV especially among those with unsuppressed viral load.

Table – Age and viral load association with precancer/cancer among WLHIV stratified states

Federal Capital Territory - FCT				
Variable	Precancer	Suspected cancer	Overall	Pvalue
Age, mean (range)	36[21,48]	43[36,54]	36[21,48]	0.556
Age category				
below 30	6(10.0)	1(9.1)	7(9.9)	
30-34 years	14(22.3)	3(27.3)	17(23.9)	
35 above	40(66.7)	7(63.6)	47(66.2)	0.960
Viral load median (range)	20[19,2370000]	20[19,405]	20[19,2370000]	0.645
Viral load category				
Suppressed (<1000)	33(55.0)	6(54.5)	39(54.9)	
Unsuppressed (>1000)	27(45.0)	5(45.5)	32(45.1)	0.978
Nasarawa				
Variable	Precancer	Suspected	Overall	Pvalue
Age, mean (range)	38[24,53]	38[27,48]	38[24,54]	0.200
Age category				
below 30	14(14.7)	0(0.00)	14(14.3)	0.407
30-34 years	22(23.2)	0(0.00)	22(22.5)	
35 above	59(62.1)	3(100.0)	62(63.3)	
Viral load median (range)	20[19,818000]	267[22,806000]	20[19,2370000]	**0.035**
Viral load category				**0.021**
Suppressed (<1000)	62(65.3)	0(0.00)	62(63.3)	
Unsuppressed (>1000)	33(34.7)	3(100.0)	36(36.7)	
Rivers				
Variable	Precancer	Suspected	Overall	Pvalue
Age, mean (range)	35[20,57]	35[22,40]	35[20,57]	0.645
Age category				
below 30	13(26.5)	1(25.0)	15(25.3)	0.843
30-34 years	10(20.4)	1(12.5)	11(19.3)	
35 above	26(53.1)	5(62.5)	31(54.4)	
Viral load median (range)	20[19,818000]	20[19,148000]	20[19,818000]	0.383
Viral load category				
Suppressed (<1000)	27(55.1)	5(62.5)	32(55.1)	0.696
Unsuppressed (>1000)	22(44.9)	3(37.5)	32(43.9)	

Outcome of Hydroxyurea Use in SCD and Evaluation of Patients' Perception and Experience in Nigeria

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Introduction:

Hydroxyurea (HU) has been shown to be beneficial in the management of sickle cell disease (SCD) as it improves treatment outcomes. However, despite the benefits of HU, its uptake among SCD patients in Nigeria remains low. Objective: This study aimed to assess the perception and experience of patients with SCD in Nigeria who are using or have used HU, thereby informing and promoting its use.

Methodology:

A multi-center, cross-sectional study was conducted among 378 SCD patients aged 1-53 years who have enrolled on Sickle Pan African Research Consortium (SPARCO) registry as HU users. The SPARCO project was funded by the National Institutes of Health (NIH) to establish a sickle cell disease (SCD) registry, strengthen skills and plan research in three African countries. The Nigerian SPARCO registry had 6453 SCD patients at the time of this report with <15% of this population on HU. Data on sociodemographics, perception and experience about HU use were obtained and analyzed using descriptive statistics.

Findings:

Out of the 378 participants, 339 (89.7%) were using HU while 39 (10.3%) had stopped using HU at the time of the study. 281(74.3%) found HU expensive, while 194(51.3%) reported none to minimal side effects while using HU. Among patients that stopped HU, cost (59%) and availability (51.3%) were the commonest reasons for discontinuing the drug. Furthermore, 347(92.5%) had fewer pain crises, 173(84.8%) had a fewer need for blood transfusion, 145(86.3%) had improved PCV and 318(84.6%) had fewer hospital admissions. Finally, the study also showed that 322 (85.2%) respondents would recommend the drug to other patients, whereas 14 respondents (3.7%) would not. Mean corpuscular volume (MCV) and fetal hemoglobin (HbF) levels were not collected in this study and may have improved findings.

Conclusion:

This study showed that the majority of the SCD patients had good perception and experience with the use of HU while a few had to stop the medication mostly on account of cost and availability. Patients' based advocacy could be leveraged to improve HU uptake while more efforts are needed to ensure that it is readily available and affordable.

Keywords: Sickle cell disease, Hydroxyurea, patients' perception, patients' experience, Nigeria

Barriers to Care and Quality of Healthcare Services in Children and Adults with Sickle Cell Disease in Abuja, Nigeria

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Introduction:
Sickle cell disease (SCD) is a major genetic disease that manifests early in life and may lead to a lifelong illness with complications. Despite recent advances in the management of this disorder, numerous barriers to care affect the quality of care received by SCD patients. Objectives: The study aims to assess the barriers to care, and quality of care among children and adults with sickle cell disease in Abuja, and to describe the association between the barriers to the care and quality of care.

Methods:
A mixed-methods, descriptive cross-sectional study was conducted between September 2022 and May 2023 in three Sickle Pan African Research Consortium (SPARCO) sites (hospitals) in Abuja, Standardized tools were adapted for the data collection. Chi-squared test was used to compare proportions and thematic analysis was used to analyze the qualitative data.

Results:
A total of 308 participants were assessed with 52(16.9%) being adults and 256(83.1%) being children. The age of participants ranged between 4 months to 39 years. The highest barriers were due to logistics – long waiting time at pay-point (40.6%), long distance to clinic (38.6%) and cost of hospitalization (21.4%). The quality of care was highest under the availability of same-day appointments when sick (91.6%). The barriers to care scores and quality of care scores showed a weak negative correlation (r = -0.410, p<0.001). The distribution of barriers and quality of care significantly differed across hospitals. Themes identified under barriers included – long waiting times, high cost of care, lack of health insurance, absenteeism from work, etc. Many participants reported good quality of care.

Conclusion:
SCD patients face numerous barriers while accessing care and a varying degree of quality of care. Minimizing these barriers may improve the quality of care and prevent complications.

Keywords: Sickle cell disease, barriers, quality of care, children, adults, Nigeria

Evaluation Of Vitamin D Receptor Polymorphism, Bone Mineral Density and Association with Bone Complications in Patients with Sickle Cell Disease in Lagos, Nigeria

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Vitamin D receptors (FokI and BsmI) polymorphisms are closely related to low bone mineral density (BMD) and can be used as useful genetic markers in determining BMD and osteoporosis risk. Many other factors contribute to bone disease and one very important factor is disorder of vitamin D metabolism. Vitamin D deficiency (VDD) is a major global health problem. The study evaluated vitamin D receptor polymorphism, bone mineral density and their association with disease severity in patients with sickle cell disease in Lagos. This comparative cross-sectional study was conducted among forty-two patients with sickle cell disease and 42 age and sex matched Hb AA control. Blood samples were assayed for full blood count, and reticulocyte count and vitamin D levels was determined y ELISA method. Bone mineral density (BMD) was measured by Dual x-ray absorptiometry (DEXA) and Vitamin D receptors Bsm1 and Fok1 were evaluated by PCR-RFLP method. The data was analyzed using Statistical Package for Social Sciences version 25, and statistical significance (p-value) was set at <0.05. The mean age of participants in SCD groups was 19.26 ± 2.32years and 19.95 ± 2.15years for HbAA controls. Vitamin D level was significantly lower in the SCD participants (41.6 ± 15.8 ng/ml) compared to the HbAA control (67.5 ± 22.8 ng/ml), $p<0.001$. Two and half percent (2.4%) of the SCD participants had VDD and 12 (28.6%) had vitamin insufficiency compared to none and 7.1% in the control, $P =0.002$. Bone health was significantly poorer in the SCD participants with a significantly lower median (IQR) BMD T score of -1.3 (-1.7- (-1.2)) compared to the median (IQR) of -0.5 (-1.0-(-0.08)) in controls, $p<0.001$. While 11.9%, 31.0% and 42.9% of SCD had osteoporosis, moderate osteopenia, and mild osteopenia respectively, none (0%), 2.5% and 27.5% of controls had osteoporosis, moderate osteopenia, and mild osteopenia respectively.

Half of the subjects with SCD have moderate disease severity, 36% with mild disease while 14% has severe disease however there is no statistical difference between the subjects with different VDR alleles.

The study also demonstrates that Bsm1 and Fok1 SNPs in the VDR gene do exist in our population but with differing frequencies from what is reported in the literature for other populations and there is no statistical difference between the VDR polymorphic alleles of the cohort and control subjects. However, it did not show any association with vitamin D status, bone mineral and disease severity

The high prevalence of vitamin D deficiency/insufficiency and low BMD in SCD suggest that they should be targeted for vitamin D supplementation and DEXA screening and osteoporosis prevention. Further research of VDR on a wider scale is required to clarify its precise genetic mechanism and effect in our population.

Keywords: Vitamin D, SCD, BMD, osteoporosis, VDR gene polymorphisms

Characteristics Of Children Living with Sickle Cell Disorders in Nigeria

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An estimated 50,000,000 people are living with sickle cell traits, while about 10,000,000 people have severe sickle cell disorders. Despite the physical, financial, and emotional burdens that sickle cell patients and their families go through, over 100,000 babies are born with sickle cell disorders annually in Nigeria. An understanding of the demographic attributes of children is crucial for health interventions. This study investigates the characteristics of children (6-59 months old) living with sickle cell disease in Nigeria. In addition, we show the characteristics of their parents and the socioeconomic and environmental conditions of the parents of the children. We analysed the latest Nigeria Demographic and Health Survey containing embedded sickle cell data. We found that of the 11,243 children with complete genotype information, 77.7% (8741) were AA, 19.6% (2201) were AS, 0.9% (102) were SS and 0.3% (34) were SC. Of the 136 children who had severe sickle cell disorder (SC and SS), 23.9% were the first child, while 21.4% were the fourth child. Most (76.5%) had mosquito bed nets for sleeping, but 37.5% lived in a household with no water at the hand washing facility. South West recorded the highest proportion of children with severe sickle cell disease (24.3%), followed by North West (23.5%), while the South-South recorded the lowest with 4.4%. The findings have several implications. First, the findings have implications for genetic counselling. Second, considerable variations exist within regions, especially between contiguous South West and South-South regions, which requires diverse approaches to health interventions. Finally, having more than half of the children in rural areas has implications for quick access to healthcare in times of need.

Keywords:
Sickle cell, north-south differences, health implications

Improving Understanding of Sickle Cell Anaemia Inheritance Patterns through an Interactive Educational Tool in Nigeria

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Background:
The inheritance pattern of sickle cell anaemia is often misunderstood. There is a 25% chance of inheriting the homozygous recessive hemoglobin genotype (HbSS) from both parents who each carry the sickle cell trait (HbAS). Many people wrongly believe that in a family of four, the children will have genotypes AA, AS, AS, and SS, respectively, and that choosing to have no more than three children can prevent sickle cell anaemia. This eventual realization of the truth after birthing a child with the disease within the first 3 deliveries usually leads to unexpected occurrences and significant distress. Objective: To address this misconception, we developed the "Sickle Cell Ball Game," an educational tool designed to clearly demonstrate the probabilistic nature of sickle cell inheritance to the community.

Methodology:
The Sickle Cell Ball Game uses two containers, each filled with equal numbers of blue and red balls, representing the A and S hemoglobin genotypes, respectively. Participants, simulating a couple, each receive a container and, after vigorous shaking to ensure randomness, pick a ball blindly. The possible outcomes are:
Two blue balls (AA): Child has no sickle cell trait.
One blue and one red ball (AS): Child is a carrier.
Two red balls (SS): Child has sickle cell disease.

This game was introduced in marriage counseling sessions, marketplaces, religious gatherings, and educational institutions in Jos, Nigeria, to educate on the inheritance patterns and the importance of knowing their genotypes before relationships.

Results:
The Sickle Cell Ball Game improved participants' grasp of the probabilistic nature of sickle cell inheritance. Feedback showed better understanding of genotype distribution and risks, making informed decision-making more likely among intending couples.

Conclusion:
Expanding this intervention across more regions and integrating it into educational and public health programs could reduce the incidence of sickle cell disease by promoting better-informed reproductive choices. This approach is promising for public health education and disease prevention.

Keywords: Sickle cell anaemia, inheritance patterns, interactive educational tool

Managing sickle cell disease in Nigeria beyond Niprisan: a systematic review

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Background/Objective:
Despite the acceptance and approval of several medications and techniques to reduce vaso-occlusive episodes (VOEs), Hydroxyurea along with other analgesics have remained the primary treatment option for Sickle Cell Disease (SCD) in Nigeria. However, in terms of cost-effectiveness and fewer side effects, Niprisan® remains the preferred option. In this review, we discussed new drugs/technologies as well as previously approved medications that could ameliorate SCA aside Niprisan; and we hope to inspire our readers by providing insights into new inventions to overcome current challenges in the field.

Methods/Results:
This review involved a comprehensive examination of existing literature on SCD treatments; specifically focusing on new pharmaceutical developments, innovative technologies, and previously approved medications on Google Scholar, PubMed, ResearchGate, EMBASE, and Cochrane database using SCD, novel therapies, Niprisan®, haematopoietic stem cell transplant, and gene therapy as search items. Additionally, the references of some retrieved articles were also searched. The literature retrieved included review articles, meta-analyses, clinical trials, and original research papers.

Conclusions/Recommendation:
Advanced insights into the cellular and molecular basis of the sickle cell disease processes have unveiled several established/potential drug targets on which newer SCD therapies are based. These newer therapies have varied mechanisms ranging from Fetal haemoglobin (HbF) induction, RBC membrane stabilization, oxidative stress reduction, adhesion inhibition, reduction of inflammation, prevention of polymerization, and enhanced flow dynamics to gene-directed therapies with the potential for cure. This expounded review has highlighted real progress in SCD treatment. However, an improved survival rate will depend on the participation of clinical sites across the globe, as well as the availability of funds to support studies needed to confirm the safety and efficacy of these drugs.

Knowledge and Attitude of Blood Donors Toward Sickle Cell Anemia in Ibadan

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Objective:
Sickle cell anemia (SCA) is a major healthcare burden in Nigeria affecting about 2% of the population. Different therapeutic approaches have been developed to manage SCA which include blood transfusion. In a bid to develop a sustainable solution to the blood supply pool, the SmileBuilders Initiative organizes a blood donation drive (Donate-A-Pint Project) quarterly in Ibadan, Nigeria. This study aimed to assess the awareness, knowledge, and attitude of blood donors in Ibadan, Nigeria to SCA.

Methods:
We conducted a descriptive cross-sectional study at the University College Hospital, Blood Bank, Ibadan. A validated questionnaire was designed by authors using questions from similar studies conducted in Nigeria. Data were collected from blood donors using a self-administered structured printed questionnaire. Data analysis was done using the Statistical Packages for Social Sciences (SPSS) version 23. The chi-square test of independence was used to test for association between the variables. A statistical significance level of 0.05 was used.

Result:
Out of the 205 donors included in the study, 68.8% (141) were male and 42.4% were aged over 24 years. Most (60.0%) donors were university students. Only 12.3% had never heard of Sickle Cell Anemia (SCA) before the study and 79.5% (163) were aware of their genotype. Only 20.0% (41) are willing to allow pregnancy after an intrauterine diagnosis of HbSS, 31.7% will abort and 48.3% (99) are undecided. Most (73.2%) respondents have good knowledge of SCA (mean score = 7.0/10.0). Several participants (42.9%) were undecided on what to do if their partners were found to have SCA after marriage. Participants' sex (p = 0.017) and level of education (p = 0.001) were found to have significant associations with knowledge of SCA.

Conclusion:
Blood donors have good knowledge, awareness and attitude to SCA although the population would benefit from more health education.

Sickle Cell Disorders among Under-5 Children in Africa: Analysis of prevalence and mortality across 54 countries from the Global Burden of Disease Study 2021.

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Background:
Sickle Cell Disease (SCD) is a growing public health problem, and Africa disproportionately bears the highest burden of the disease globally.

Objectives:
i.   To determine the prevalence and mortality burdens of sickle cell disease among under-5 (U-5) children across 54 countries in Africa.
ii. To determine the association between socio-economic factors (gross domestic product-GDP) and U-5 SCD mortality rates across countries in Africa
iii. To predict estimates of prevalence and mortality rates of U-5 SCD by 2030.

Methodology:
This was a retrospective, cross-sectional analysis of sickle cell disorders (SCD) data from the 2000-2021 Global Burden of Disease Data (https://ghdx.healthdata.org/gbd-2021). Indicators on prevalence and deaths of SCD among U-5 children for all African countries were extracted. GDP data was obtained from World Bank estimates (https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=A9), and measured in United States Dollars (USD). Data was analysed using descriptive statistics and spearman rank correlation. Additionally, the exponential time smoothing model was used to predict 2030 estimates of prevalence and mortality rates. All analyses were conducted in Stata version 18 and Microsoft Excel.

Results:
The estimated burden of sickle cell disorders among children under-5 years across Africa in 2021 was 1.8 million children (1.4-2.1 million). Countries with the highest prevalence rates per 100,000 population in 2021 included Benin (2400), Sierra Leone (2370) and Nigeria (2161). However, U-5 cause-specific mortality rates per 100,000 population were highest in Burkina Faso (32.1), Benin (29.4) and Togo (20.7). There was a significant negative correlation between GDP and U-5 SCD mortality rate across countries in 2021 (rho=-0.374, p-value=0.006) (Fig 2). Predicted U-5 SCD prevalence rates in 2030 were highest in Nigeria- 2040 (95% CI: 1884-2197), Sierra-Leone- 2351 (95%CI: 2333-2370) and Togo- 1894 (95%CI: 1881-1907) (Fig. 1). Similarly, predicted U-5 SCD cause-specific mortality rates in 2030 were highest in Benin 23 (95% CI:17-28), Burkina Faso- 20 (95%CI: 13-27) and Togo- 15 (95%CI: 11-18) (Fig 3).
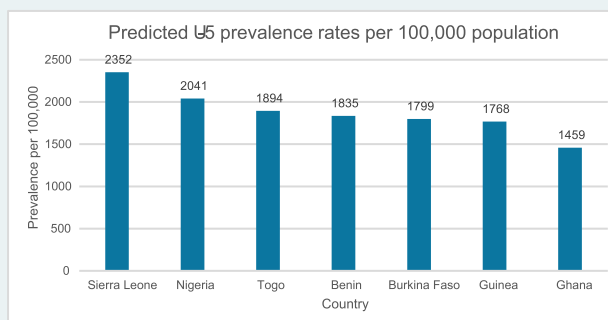

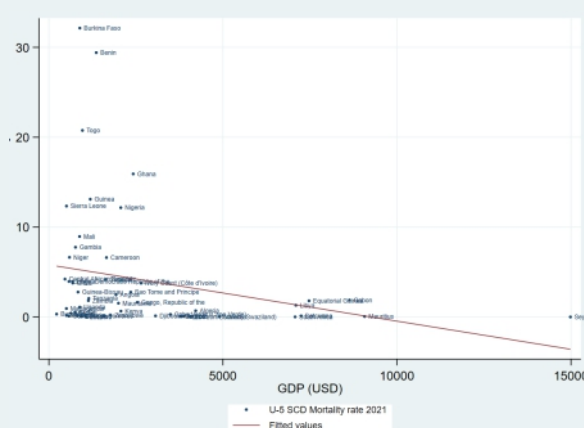Fig.1: Predicted U-5 prevalence rates per 100,000 population across countries

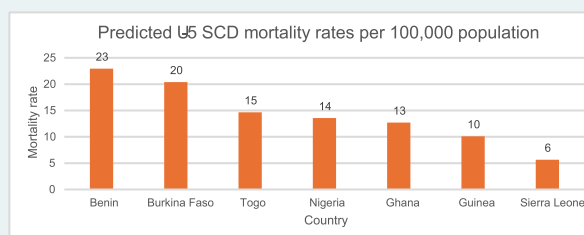Fig 2: Country GDP (USD) and U-5 SCD mortality rate in 2021

Fig.3: Predicted U-5 SCD mortality rates per 100,000 population across countries

Conclusion:
This review shows that west African countries have the highest prevalence and cause specific mortality rates of SCD among U-5 children in Africa, and will continue to bear the burden till 2030. Additionally, higher GDP across countries was significantly associated with lower U-5 SCD mortality rates, however, the correlation was weak. It is critical that policy change, resource commitment and targeted prevention activities are accelerated to reduce the prevalence and mortality of SCD among under-5 children in Africa.

Ecological Analysis Between Under 5 Sickle Cell Disorders and Associated Mortality in Africa

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Evaezi Okpokoro[1], Abimiku Alash'le, PhD[1,2]

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Background:

Despite the established rise in the global burden of Sickle Cell Disorders (SCDs), the relationship between SCD prevalence and associated mortality is not clear. We examined the relationship between under-5 SCD prevalence and cause-specific mortality across Africa.

Methods:

We obtained prevalence and mortality rates data of 54 African countries between 2000 and 2021 from the Global Burden of Disorder Data (https://ghdx.healthdata.org/gbd-2021). Further, prevalence-to-mortality rate ratios were estimated. Correlational analysis was carried out in STATA 18, at 5%.

Results:

Our findings revealed that prevalence of under-5 SCD rose from 1.2million in 2000 to 1.7million in 2021 – with a notably high prevalence and mortality in Benin, Burkina Faso, and Togo (Figure 1). We found a significant correlation between under-5 SCD overall prevalence and cause-specific mortality rates across countries (rho=0.859, p-value<0.001). A significant positive correlation was observed between prevalence and mortality rates of Congo and Equatorial Guinea (rho=1.000, p-value<0.001), Mali and Niger (rho=0.943, p-value=0.005), Burkina Faso (rho=0.928, p-value=0.008), Gambia, Sierra Leone and Sudan (rho=0.886, pvalue=0.019), Chad (rho=0.841, p-value=0.036), Madagascar, Benin, Guinea-Bissau and Nigeria (rho=0.829, p-

value=0.042). On the other hand, Cameroon (rho=0.943, p-value=0.005), DR Congo (rho=-0.829, p-value=0.042), and Guinea (rho=-0.886, p-value=0.019) were found to have a significant negative correlation. Furthermore, overall prevalence-to-mortality ratios was 2.09 per 1000 children with declining ratios observed across the years (3.99 in 2000, 2.06 in 2010, 1.69 in 2015, 1.47 in 2020 and 1.38 in 2021).
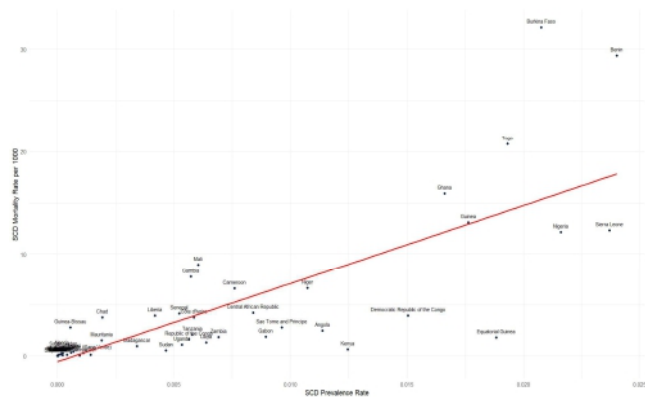

Fig 1: SCD Prevalence and Mortality Rate in 2021

Conclusions:

Majority of the African countries have a high SCD prevalence, and our study revealed a strong positive correlation between prevalence and associated mortality among children. However, a few (Cameroon, DR Congo and Guinea) were observed to experience declining mortality. Understanding practices in these countries may be useful in developing strategies to reduce SCD related mortality, especially in communities with low resources/fragile socioeconomic situations.

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