

Editorial Note
**Bridging Clinical Discrepancies and Public Health
Imperatives in Modern Dentistry**

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The clinical practice of dentistry is fundamentally bound to the health systems, regulatory architectures, and socioeconomic realities of the populations it serves. In this third issue of the *African Journal of Contemporary Dental Sciences* (AJCDS), we present five peer-reviewed articles that collectively highlight a critical theme: the persistent gap between conceptual knowledge and clinical execution in dental practice. From structural human rights barriers to the evaluation of emerging digital tools, this issue highlights the urgent need for evidence-based accountability and standardized protocols within regional oral health platforms.

Global Frameworks and the Reality of Sub-Saharan Africa

Opening this issue, a landmark scoping review evaluates the human rights policy landscapes and structural barriers defining oral health in Sub-Saharan Africa. While individual rights to accessible and affordable oral healthcare are normatively encompassed under Article 12 of the International Covenant on Economic, Social and Cultural Rights (ICESCR) and the foundational AAAQ framework (Availability, Accessibility, Acceptability, Quality), operational execution remains profoundly deficient.

The data are stark: fewer than five of the 54 African Union member states possess enforceable legislative provisions governing public oral health service delivery. This legislative omission leaves oral health systematically excluded from Universal Health Coverage (UHC) benefit packages. The consequences are measurable; an estimated 90% of dental disease across Sub-Saharan Africa remains untreated, the continent suffers an annual population-attributable economic productivity loss of approximately 9 billion USD due to untreated oral pathologies. These structural failures compound global workforce inequities, where over 80% of countries in the region operate with a dentist-to-population ratio below 1:100,000—and several drop further to under 1:1,000,000.

A rights-based framework requires that regional governments move past generic definitions of health. Progressive realization demands the implementation of thoughtful, context-appropriate care pathways.

Minimal Intervention and Pediatric Reality

Translating these systemic barriers to the chairside, this issue features two key papers emphasizing minimal intervention protocols in the management of dental caries and traumatic dental injuries (TDIs).

A compelling pediatric case report illustrates the dangerous outcomes that occur when clinicians deviate from established International Association of Dental Traumatology (IADT) guidelines. The report details the clinical presentation of a four-year-old girl suffering from pathological root resorption, severe gingival inflammation, and a significant risk of aspiration following the improper, year-long wire-composite splinting of reimplanted primary central incisors. Because reimplantation of avulsed primary teeth carries severe risks to developing permanent successors and risks pediatric aspiration, current evidence mandates that avulsed primary teeth be discarded. This caution reminds practitioners that clinical intent must always align with contemporary, consensus-based guidelines.

Where non-invasive stabilization is indicated, Silver Diamine Fluoride (SDF) emerges as a crucial agent within the minimal intervention continuum for low-resource settings. Reflecting on recent clinical trial evidence from Nigeria and Egypt, a comprehensive narrative review outlines how a 38% SDF solution can successfully arrest active dentine lesions without requiring complex restorative infrastructure. This approach bridges the structural gap for high-risk patients awaiting

definitive care. However, this strategy hinges on specific, visual, and documented patient-centered consent regarding the resulting permanent black staining of carious tissues. Minimally invasive strategies must remain biologically driven, strictly protocol-bound, and ethically transparent.

Occupational Hazards and the Knowledge–Practice Gap

The vulnerabilities of our dental workforce are brought to the front in an original cross-sectional study evaluating Hepatitis B Virus (HBV) knowledge and infection prevention practices among dental practitioners in Zimbabwe. Operating within a region of high endemicity where HBV general population prevalence often exceeds 8%, dental professionals face substantial occupational exposure due to routine handling of blood, saliva, and sharp instruments.

The investigation reveals a critical knowledge–practice gap, while baseline awareness of needle-stick risks is high, only 60% of surveyed practitioners correctly identified saliva as a potential medium for HBV transmission. This diagnostic blind spot directly parallels selective compliance with Personal Protective Equipment (PPE). High adherence was reported for basic gloves (91.9%) and masks (89.2%), yet utilization rates dropped considerably for protective eyewear (45.9%), disposable gowns (35.1%), and head covers (27.0%). This selective protection fails to shield practitioners during routine aerosol-generating procedures, likely contributing to the finding that 65% of respondents reported experiencing at least one occupational exposure event.

Furthermore, alarming deficiencies were noted regarding Post-Exposure Prophylaxis (PEP). A striking 94.0% and 95.1% of practitioners lacked accurate knowledge regarding the required initiation timeframes and duration protocols for PEP, respectively. Intensified by a full vaccination rate of only 59.5% within the sample, these findings present a clear directive to regulatory bodies. We must institute mandatory immunization verification and uniform, facility-level infection control audits to safeguard our professional workforce.

Navigating the Digital Frontier

Finally, this issue looks toward the future of dental education and clinical practice through an original study analyzing the diagnostic accuracy of generative artificial intelligence (AI) chatbots in classifying partially

edentulous arches. Using 150 intraoral occlusal views, the study evaluated large language models on their adherence to Kennedy classification parameters and Applegate's rules. The results demonstrate a statistically significant difference in diagnostic accuracy: ChatGPT (version 5) achieved the highest accuracy rate at 79.3%, followed by Perplexity Pro at 70.5% and Google Gemini 3.1 at 68.7%. While these models show clear promise as educational adjuncts and digital cross-checks, a wrong classification rate of 20.7% for the top-performing model establishes that generative AI is not yet a reliable substitute for professional clinical judgment. True clinical efficacy requires the development of domain-specific, high-quality annotated dental datasets to refine these tools before automated integration can be safely realized.

The articles in this issue of AJCDS emphasize that advancing contemporary dental sciences requires a dual commitment: the pursuit of clinical excellence at the chairside and active engagement with the structural policies that govern public health. By publishing these rigorous regional studies, this journal aims to provide the empirical baseline necessary to eliminate diagnostic gaps, protect clinical workforces, and build reasonable, evidence-based oral healthcare systems across Africa