JDHT Journal of Dental Hygiene and Therapy
Volume 7, Nomor 2 Tahun 2026, pp. 134-141
ISSN (online): 2723-1607 DOI: 10.36082/jdht.v7i2.3498

INTEGRATING ORAL HEALTH INTO PRIMARY HEALTH CARE IN NIGERIA AND SOMALIA: A COMPARATIVE NARRATIVE REVIEW

Ajetunmobi Adeshola Adelekan[1], Fartun Abdi Khaliif[2]
[1,2]Department of Dentistry and Oral Health, Faculty of Medicine and Health Sciences, Frontier University, Garowe, Somalia

Info Article

Article History:
Received: 1 Sept 2026
Revised: 28 Sept 2026
Accepted: 12 Oct 2026
Available Online: 15 Oct 2026

Keywords:
Oral Health, Primary Health Care, Nigeria, Somalia, Task-sharing

This is an open access article under the CC-BY-SA license.
Copyright © 2026 by Author.
Published by Politeknik Kesehatan Kemenkes Jakarta I

Abstract

This structured narrative review compares barriers, policy frameworks, and implementation priorities for integrating oral health into primary health care in Nigeria and Somalia. PubMed and targeted bibliographic and agency searches covered January 2017–August 2026; 29 sources were synthesized: 24 peer-reviewed journal publications and five official policy or World Health Organization documents. Evidence was organized around burden, governance, financing, workforce, service delivery, referral, community participation, information systems, and education. World Health Organization country profiles report modeled 2019 estimates of untreated caries in primary teeth among children aged 1–9 years of 35.5% in Nigeria and 43.0% in Somalia, and in permanent teeth among people aged 5 years or older of 23.9% and 33.7%, respectively. Nigeria reported 4,358 dentists (0.2 per 10,000 population) in 2018; the Somalia country profile reported no workforce estimate. Both systems face access and affordability barriers, while Somalia also has acute regulatory and data gaps. Nigeria's National Oral Health Policy and Somalia's Essential Package of Health Services 2020 provide policy entry points, although implementation capacity remains uneven. Feasible integration requires a financed basic package, competency-based task-sharing, essential supplies, two-way referral, routine indicators, and local evaluation. Research priorities include workforce mapping, cost-effectiveness, referral completion, and equitable access. Screening and exclusion totals were not available in the source record, so this narrative review does not claim a PRISMA flow.

Corresponding author:
Ajetunmobi Adeshola Adelekan
Department of Dentistry and Oral Health, Faculty of Medicine and Health Sciences, Frontier University, Garowe, Somalia.
Email: adesholaajetunmobi@gmail.com

Introduction

Oral health supports eating, speaking, social interaction, learning, and daily functioning. Dental caries, periodontal disease, oral cancer, tooth loss, and other oral conditions cause pain and disability, and can lead to avoidable school or work absence and household expenditure. Oral diseases also share major risk factors with other noncommunicable diseases, including high sugar intake, tobacco use, harmful alcohol use, and inadequate access to prevention. Despite these connections, oral care is often organized separately from routine health services and remains weighted toward episodic, curative treatment (Peres et al., 2019; World Health Organization [WHO], 2024).

The WHO Global Oral Health Action Plan 2023–2030 calls for essential oral health care to be integrated into primary health care (PHC). Its global target is for oral health services to be generally available in PHC facilities in 80% of countries by 2030 (WHO, 2024). PHC can provide a platform for prevention, early identification, management of shared risk factors, continuity, and referral, but integration does not mean that every primary-care worker should undertake complex dental treatment. It requires defined responsibilities, training, supplies, supervision, and reliable links to oral-health professionals. Reviews identify leadership, local adaptation, financing, interprofessional collaboration, and monitoring as recurring facilitators and barriers (Harnagea et al., 2017; Prasad et al., 2019; Verdugo-Paiva et al., 2024).

Comparable WHO country-profile estimates illustrate the burden. For 2019, modeled prevalence of untreated caries in deciduous teeth among children aged 1–9 years was 35.5% in Nigeria and 43.0% in Somalia; untreated caries in permanent teeth among people aged 5 years or older was 23.9% and 33.7%, respectively. Severe periodontal disease was estimated at 25.1% in Nigeria and 16.2% in Somalia, and complete tooth loss among adults aged 20 years or older at 1.7% and 2.2%. These are modeled

estimates rather than direct national surveys. Nigeria's 2022 WHO profile reported 4,358 dentists in 2018 (0.2 per 10,000 population); the Somalia profile did not report a comparable oral-health workforce estimate. Reported outpatient dental expenditure in 2019 was US$0.7 per capita in Nigeria and US$0.2 in Somalia, combining public and private sources rather than measuring government budget allocations (WHO, 2022a, 2022b).

Nigeria and Somalia are useful but distinct cases. Nigeria has a larger formal health and oral-health training base and a national PHC platform, yet service availability, workforce distribution, and financing remain uneven. The National Oral Health Policy (2012) explicitly supports prevention and integration; a revised 2024–2029 policy is reported in recent Nigerian literature, but the final official text was not independently verified for this review (Federal Ministry of Health, Nigeria, 2012; Ayamolowo et al., 2025). In Somalia, the federal Essential Package of Health Services (EPHS) 2020 provides a service-delivery framework that includes oral-health interventions, but reports describe substantial implementation, regulation, and resource constraints (Ministry of Health and Human Services, Federal Government of Somalia, 2020; Gedi et al., 2024). Evidence from Hargeisa is identified as Somaliland-specific and is not treated as nationally representative evidence for Federal Somalia.

This review compares the barriers and enabling conditions shaping oral-health integration in Nigeria and Somalia and identifies feasible priorities for policy, PHC practice, workforce development, and dental hygiene and therapy education. It focuses on service-system integration rather than comparing clinical treatment outcomes. The aim is to distinguish shared priorities from country-specific actions and to identify evidence gaps that should guide implementation and future research.

Method

A structured narrative-review approach was used to synthesize peer-reviewed research, reviews, and official policy or agency documents relevant to oral-health systems, PHC integration, workforce, access and financing, community services, and referral. PubMed was searched on 28 September 2026 using a publication-date filter from 1 January 2017 through 31 August 2026. The exact query was:

```
("oral health"[Title/Abstract] OR "oral healthcare"[Title/Abstract] OR "oral health care"[Title/Abstract] OR "dental caries"[Title/Abstract] OR "dental workforce"[Title/Abstract]) AND ("primary health care"[Title/Abstract] OR "primary healthcare"[Title/Abstract] OR "primary care"[Title/Abstract] OR "health system"[Title/Abstract] OR "health systems"[Title/Abstract] OR policy[Title/Abstract] OR workforce[Title/Abstract] OR integration[Title/Abstract] OR "task sharing"[Title/Abstract] OR "task shifting"[Title/Abstract]) AND (Nigeria[Title/Abstract] OR Somalia[Title/Abstract] OR Somaliland[Title/Abstract] OR Africa[Title/Abstract] OR "sub-Saharan Africa"[Title/Abstract]) AND ("2017/01/01"[Date - Publication] : "2026/08/31"[Date - Publication])
```

The PubMed query returned 113 identifiers; an EFetch export contained 112 records, with one identifier not represented in the export. The supplied source files did not contain a contemporaneous record-by-record screening or full-text exclusion log. Accordingly, this review reports the verified retrieval and export counts and final bibliography scope, but does not reconstruct screened or excluded counts or present a PRISMA flow. The 2017–2026 date window applied to journal publications; the foundational 2012 National Oral Health Policy was retained as a historical policy source. Targeted searches of journal and publisher records, reference lists, the WHO repository, and national health-agency sources were used to locate contextual publications and official documents; supplementary search hit counts were not retained.

Sources were considered for inclusion when they addressed one or more of the following: oral-health policy or governance; financing, affordability, or access; workforce distribution or task-sharing; PHC, preventive, or referral services; community engagement or care-seeking; or Nigeria- or Somalia-specific health-system conditions. Both empirical and synthesis designs were eligible. Official policy and agency documents were included when they established a national service or global policy framework. Sources were not treated as interchangeable: country-specific data were distinguished from regional or global evidence, and Somaliland findings were labeled separately from Federal Somalia evidence. The final bibliography contains 29 sources: 24 peer-reviewed journal publications and five policy or agency documents.

A qualitative, source-specific appraisal framework was applied rather than a single numerical score. For empirical studies, the review considered design appropriateness, sampling and setting, transparency of measures and analysis, potential selection or measurement bias, confounding where relevant, limitations, and transferability. For systematic or scoping reviews, it considered search and selection transparency, synthesis methods, and heterogeneity. For policies and agency reports, it considered provenance, date, scope, service-level definitions, and whether stated commitments were distinguished from implementation. No pooled risk-of-bias score was calculated. SANRA is designed to appraise narrative-review reporting, while MMAT assesses empirical study designs and does not cover policy documents; neither was used as a universal appraisal score for this mixed evidence base.

Findings were organized narratively across burden and workforce, governance and policy, financing and access, service delivery and referral, community participation, information systems, and education. No meta-analysis was conducted because the sources differed in design, population, outcome definitions, and geographic coverage. This review used published and publicly available material and did not involve human participants; ethics approval was not required.

Table 1. Search retrieval and evidence-base summary

Search or synthesis item	Verified count or status
PubMed records identified by the stated query	113 identifiers (search run 28 September 2026; publication-date filter 1 January 2017–31 August 2026)
Records returned in the EFetch export	112; one identifier was not represented in the export
Record-level screening and full-text exclusions	Not recorded in the supplied source files; not reconstructed
Supplementary targeted and reference-list searches	Used to identify contextual journal articles and official documents; hit counts not retained
Final sources synthesized	29 total: 24 peer-reviewed journal publications and 5 policy/agency documents
Review type and quantitative synthesis	Structured narrative review; no meta-analysis and no PRISMA flow claimed

Note. The table reports counts verified from the PubMed query/export and the final reference list. It does not represent a PRISMA screening flow; eligibility and exclusion totals were not documented in the source record.

Result

Evidence base and scope

The 29-source synthesis comprised 24 peer-reviewed journal publications and five policy or agency documents. The journal literature included country studies, qualitative research, intervention evaluations, systematic and scoping reviews, and regional health-system analyses. Evidence was substantially stronger for Nigeria than for Federal Somalia, especially for PHC-worker training and service access. The available Somalia-specific evidence included a practitioner-focused study and a national policy package, while comparable oral-health workforce data were absent from the WHO country profile (Gedi et al., 2024; Luan et al., 2024; WHO, 2022b).

Comparative burden, workforce, and financing

Table 2 presents comparable WHO profile estimates and policy anchors. The disease-burden measures are modeled estimates for 2019, not findings from contemporaneous national clinical examinations. A 2026 Nigerian systematic review and meta-analysis also documents a diverse national evidence base for caries, reinforcing the need to interpret single pooled or modeled estimates in light of age, dentition, geography, and study heterogeneity (Akinsolu et al., 2026).

Table 2. Comparative baseline indicators and policy anchors for Nigeria and Somalia

Indicator	Nigeria	Somalia
Untreated caries, deciduous teeth (2019; ages 1–9)	35.5%	43.0%
Untreated caries, permanent teeth (2019; age ≥5 years)	23.9%	33.7%
Severe periodontal disease (2019; age ≥15 years)	25.1%	16.2%

Indicator	Nigeria	Somalia
Complete tooth loss / edentulism (2019; age ≥20 years)	1.7%	2.2%
Dentists reported in WHO profile	4,358 (2018); 0.2 per 10,000 population	No workforce estimate reported; Gedi et al. (2024) cite a secondary estimate of fewer than 100 dentists, without a comparable verified density
Outpatient dental-care expenditure (2019; public + private)	US$137 million total; US$0.7 per capita	US$2.6 million total; US$0.2 per capita
Named policy/service anchor	National Oral Health Policy (2012); a 2024–2029 revision is reported in recent literature, but the final official text was not verified for this review (Federal Ministry of Health, Nigeria, 2012; Ayamolowo et al., 2025)	Essential Package of Health Services (EPHS) Somalia 2020, including oral-health promotion, referral, and dental care at specified service levels (Ministry of Health and Human Services, Federal Government of Somalia, 2020)

Note. Disease prevalence estimates are modeled WHO/Global Burden of Disease 2019 estimates published in the 2022 country profiles (WHO, 2022a, 2022b). Nigeria's dentist count and density are the latest figures shown in its WHO profile; Somalia's missing workforce value is not zero. The "fewer than 100" estimate is secondary and should not be compared as a rate (Gedi et al., 2024). Dental expenditure refers to outpatient care from public and private sources; it is not a government oral-health budget share. Policy anchors are cited in the text and in the relevant cells. WHO country-profile evidence describes Somalia at national level; the Hargeisa study cited below is specific to Somaliland.

Policy frameworks and implementation

Nigeria's 2012 National Oral Health Policy calls for prevention, primary oral health care, workforce development, research, financing, and coordination across levels of government (Federal Ministry of Health, Nigeria, 2012). Recent literature reports a revised National Oral Health Policy for 2024–2029 and describes a stronger integration emphasis, including maternal and child health; however, the final official revision text was not independently verified in the source set used for this review (Ayamolowo et al., 2025). The distinction between policy issuance and implementation is important: Nigerian health-system analyses describe persistent gaps in public financing, PHC availability, access, workforce distribution, and research capacity (Amedari et al., 2022; Urquhart et al., 2024; Verdugo-Paiva et al., 2024).

Task-sharing, community access, and education

Nigerian studies provide direct, though mostly pilot-scale, evidence that non-dental PHC workers can contribute to oral-health education and referral. A three-day community-health-worker module in Ikeja improved knowledge scores and was followed by reported incorporation of oral-health education into routine sessions; a later pre–post intervention with 267 nursing mothers in Lagos reported improved knowledge and infant oral-hygiene practices after education delivered by PHC workers (Adeniyi et al., 2017, 2018). The quasi-experimental Project OHE-NCHeW evaluation recruited 120 nurses and community health workers across Lagos, Oyo, and Kano; the five-day training improved selected knowledge and practice outcomes compared with a single-session lecture, and referral outcomes varied by site (Oladayo et al., 2025a). A companion implementation account describes favorable staff and patient responses while identifying costs, resources, and referral gaps as sustainability concerns (Oladayo et al., 2025b). These results support feasibility, not a claim of national effectiveness.

Qualitative Nigerian evidence identifies both opportunities and barriers to integrating oral health into antenatal and community care. Providers have discussed the potential to incorporate oral-health assessment and counselling into prenatal care, while reporting practical constraints such as training, time, and referral continuity (Adeniyi et al., 2021; Ayamolowo et al., 2025). Studies in an urban Lagos slum and among adult Nigerians describe low routine attendance, symptom-driven care-seeking, and the influence of social perceptions, pain, and cost (Gbadebo et al., 2025; Osuh et al., 2023). Regional work on adolescents in West Africa similarly

emphasizes social determinants that shape oral-health behavior and access (Shomuyiwa & Bridge, 2023).

Somalia-specific evidence remains sparse. Gedi et al. (2024) interviewed 15 practitioners working across multiple cities, including Mogadishu, Kismayo, Garoowe, and Qardho in Federal Somalia and Hargeisa and Borama in Somaliland. Their findings on public awareness, delayed presentation, affordability, provider regulation, and PHC links are multi-site practitioner perspectives, not a representative Federal Somalia estimate. A school-based study among 12-year-olds in Hargeisa found a substantial caries burden, but it is Somaliland-specific and cannot be generalized to all Federal Somalia (Dahroug et al., 2024). Wider African and low-income-country reviews support task-sharing and integrated coverage as system strategies, while emphasizing that oral-health workforce data, local financing, and implementation evidence are incomplete (Folayan et al., 2025; Kaguru et al., 2022; Luan et al., 2024; Okoroafor & Christmals, 2023).

Discussion

This comparison identifies a common implementation gap: both countries have a rationale and policy entry points for PHC integration, but routine oral-health prevention and referral are limited by financing, workforce distribution, service readiness, and weak continuity. The disease estimates establish that untreated caries and tooth loss are not marginal concerns, but burden figures alone do not specify which services a PHC facility can safely provide. The strategic choice is therefore a defined, financed, and measurable package that links primary care to dental services rather than a general instruction to "integrate" oral health.

A country-led essential package

Nigeria can use its National Oral Health Policy and existing PHC structures to define a minimum package across states and local government areas, with explicit responsibilities, supply lists, supervision, and reporting. The reported 2024 policy revision may provide an updated framework, but implementers and researchers should verify its final official text and indicators before using it as a basis for targets. Somalia can operationalize the EPHS 2020 oral-health components through phased service specifications matched to facility capacity and security. At PHC level, promotion, symptom and risk assessment, recognition of danger signs, pain triage, and referral are realistic starting functions; higher-level facilities can provide clinical interventions where trained staff, infection prevention, equipment, and follow-up are available. This tiered approach is consistent with global integration recommendations and regional policy evidence (WHO, 2024; Verdugo-Paiva et al., 2024).

Competency-based task-sharing and professional education

Task-sharing is not delegation without safeguards. Community health workers can deliver prevention messages, support early help-seeking, identify obvious concerns, and refer; nurses and midwives can include oral-health questions and counselling in maternal, child, and noncommunicable-disease care. Screening or clinical procedures should be assigned only when national scope-of-practice rules, competency assessment, supplies, supervision, and referral are in place. Dental therapists and hygienists can extend preventive and basic clinical capacity within the law, with dentists supporting protocols, supervision, and complex care. Evidence from Nigerian pilots is encouraging but limited by local setting, short follow-up, and study design; it should guide further implementation research rather than be interpreted as proof of population-wide impact (Adeniyi et al., 2017, 2018; Oladayo et al., 2025a, 2025b). Regional training reviews and African dental-school assessments also point to the need for interprofessional curricula and stronger policy and research capacity (Kaguru et al., 2022; Urquhart et al., 2024).

Referral and continuity of care

Screening has limited value if the patient cannot obtain appropriate care or the PHC team never learns what happened. Both countries need a two-way pathway with named receiving facilities, standard referral information, urgency criteria, a feasible communication method, and feedback on diagnosis, treatment, and follow-up. In resource-constrained settings, a paper form plus telephone follow-up may be more dependable than an unsupported digital system. The proposed workflow in Figure 1 is adaptable; national authorities should specify cadre scope, emergency routes, and referral responsibilities.

Table 3. Proposed bidirectional referral and feedback pathway between PHC clinics and secondary dental services

PHC clinic	Forward referral →	Secondary dental clinic / referral hospital
Educate; assess symptoms and risk; perform visual checks only within training and authorization; document and triage.	Use standard referral information, name the receiving facility, state urgency, and arrange safe transfer when needed.	Confirm assessment; provide care within professional scope; document treatment and next steps.
Receive feedback, update the PHC record, follow up referral completion, and continue prevention.	← Return feedback: findings, care provided, pending needs, and follow-up plan.	Send the care plan and follow-up recommendations to the referring PHC team.

Note. This is a proposed, editable workflow rather than a validated national protocol. Service scope, urgency criteria, and named referral sites must be set locally.

Information systems, community participation, and research priorities

Oral health should be visible in routine PHC information systems through a small set of feasible indicators: clients counselled, people assessed, urgent presentations, referrals issued, referrals completed, and selected preventive services delivered. Disaggregation by age, sex, geography, and priority group can show whether integration reaches people who face the largest access barriers. Community members should help adapt messages, identify costs and transport barriers, and monitor whether referrals result in care. This is particularly important where pain, fear, low perceived need, and social expectations shape care-seeking (Gbadebo et al., 2025; Osuh et al., 2023; Shomuyiwa & Bridge, 2023).

Strengths and limitations

This review places WHO burden estimates beside policy, workforce, and implementation evidence and distinguishes national data from local studies. It also includes a transparent search query and verified retrieval counts. Its limitations are substantial: the source material did not preserve record-level screening and exclusion decisions, supplementary search hit counts were not retained, and a single PubMed query cannot guarantee comprehensive coverage. This is therefore a structured narrative review, not a systematic review or a PRISMA-compliant review. The WHO disease figures are modeled estimates; Nigeria and Somalia workforce data are not equally complete; expenditures are not public-budget estimates; and intervention evidence is mainly pilot-scale. The Gedi et al. practitioner study included cities in both Federal Somalia and Somaliland, while the Hargeisa school study is Somaliland-specific; neither is a representative estimate for all of Federal Somalia. The official text of the reported 2024–2029 Nigerian policy revision should be verified before submission or policy use.

Conclusions and Suggestions

Nigeria and Somalia share a need to move oral health from episodic dental treatment into a financed, prevention-oriented PHC pathway, but their implementation contexts differ. Nigeria can build on its National Oral Health Policy and existing PHC and training platforms; Somalia can operationalize the oral-health components of EPHS 2020 through phased services, stronger regulation, and workforce mapping. Both ministries should define an essential package, authorize and supervise competency-based roles, secure supplies, establish two-way referral, and monitor access and referral completion. Cost-effectiveness, safety, workforce distribution, and equitable reach should be evaluated before scale-up. Better national data—especially on the oral-health workforce and service access in Federal Somalia—are necessary for setting credible targets.

References

Adeniyi, A. A., Ajieroh, V., Sofola, O. O., Asiyanbi, O., & Oyapero, A. (2017). A pilot test of an oral health education module for community health workers in Ikeja LGA, Lagos State. African Journal of Oral Health, 7(1), 8–16. https://doi.org/10.4314/ajoh.v7i1.162231

Adeniyi, A. A., Oyapero, A., Ajieroh, V., Sofola, O., & Asiyanbi, O. (2018). Effect of health education intervention conducted by primary health care workers on oral health knowledge and practices of nursing mothers in Lagos State. Journal of Public Health in Africa, 9(2), Article 833. https://doi.org/10.4081/jphia.2018.833

Adeniyi, A., Donnelly, L., Janssen, P., Jevitt, C., von Bergman, H., & Brondani, M. (2021). A qualitative study of health care providers' views on integrating oral health into prenatal care. JDR Clinical & Translational Research, 6(4), 409–419. https://doi.org/10.1177/2380084420961998

Akinsolu, F. T., Abodunrin, O. R., Chukwuemeka, A., Olagunju, M. T., Adewole, I. E., Salako, A. O., ... Foláyan, M. O. (2026). Prevalence of dental caries in the primary, mixed and permanent dentitions in Nigeria: A systematic review and meta-analysis. PLOS ONE, 21(6), e0349112. https://doi.org/10.1371/journal.pone.0349112

Amedari, M. I., Ogunbodede, E. O., Uti, O. G., Aborisade, A. O., & Amedari, I. K. (2022). Strengthening the oral health system in Nigeria: A health systems building block approach. Nigerian Postgraduate Medical Journal, 29(3), 173–182. https://doi.org/10.4103/npmj.npmj_127_22

Ayamolowo, L. B., Ibitoye, O. S., Esan, A. O., Akinsolu, F. T., Eleje, G. U., Salako, A. O., ... Foláyan, M. O. (2025). Healthcare workers' perspectives on integrated oral and antenatal health care at public health facilities in southwestern Nigeria: A qualitative study. BMC Health Services Research, 25, Article 1091. https://doi.org/10.1186/s12913-025-13308-1

Dahroug, A. E., Heen, E. K., Hussein, M. A., & Madar, A. A. (2024). Dental caries status and related factors among 12-year-old Somali school children in Hargeisa. Community Dentistry and Oral Epidemiology, 52(6), 861–870. https://doi.org/10.1111/cdoe.12990

Federal Ministry of Health, Nigeria. (2012). National oral health policy. https://extranet.who.int/ncdccs/Data/NGA_B8_ORALHEALTHPOLICY.pdf

Folayan, M. O., Ishola, A. G., Bhayat, A., El Tantawi, M., & Ndembi, N. (2025). Strengthening health systems to tackle oral diseases in Africa: Africa Centers for Disease Control and Prevention's role. Frontiers in Public Health, 13, Article 1539805. https://doi.org/10.3389/fpubh.2025.1539805

Gbadebo, S. O., Okereke, P. U., Oke, G. A., & Dosumu, O. O. (2025). "Since I never felt pain, it didn't occur to me to visit a dental clinic": A qualitative exploration of social perceptions and influencers of oral care-seeking behaviour among adult Nigerians. BMC Oral Health, 25, Article 1196. https://doi.org/10.1186/s12903-025-06634-7

Gedi, S., Hassan, A. M., Dahir, M. M., Ahmed, A., Mohamud, N. A., Garba, B., ... Mohamed, M. A. (2024). Challenges in oral health practice in Somalia: A call for regulatory strengthening and inclusion into primary healthcare services. BMC Oral Health, 24, Article 1440. https://doi.org/10.1186/s12903-024-05221-6

Harnagea, H., Couturier, Y., Shrivastava, R., Girard, F., Lamothe, L., Bedos, C. P., & Emami, E. (2017). Barriers and facilitators in the integration of oral health into primary care: A scoping review. BMJ Open, 7(9), e016078. https://doi.org/10.1136/bmjopen-2017-016078

Kaguru, G., Ayah, R., Mutave, R., & Mugambi, C. (2022). Integrating oral health into primary health care: A systematic review of oral health training in Sub-Saharan Africa. Journal of Multidisciplinary Healthcare, 15, 1361–1367. https://doi.org/10.2147/JMDH.S357863

Luan, Y., Sardana, D., Jivraj, A., Liu, D., Abeyweera, N., Zhao, Y., ... Lu, C. (2024). Universal coverage for oral health care in 27 low-income countries: A scoping review. Global Health Research and Policy, 9, Article 34. https://doi.org/10.1186/s41256-024-00376-9

Ministry of Health and Human Services, Federal Government of Somalia. (2020). Essential package of health services (EPHS): Somalia 2020. https://moh.gov.so/so/wp-content/uploads/2023/05/Essential-Packages-of-Health-Services-2020.pdf

Northridge, M. E., Kumar, A., & Kaur, R. (2020). Disparities in access to oral health care. Annual Review of Public Health, 41, 513–535. https://doi.org/10.1146/annurev-publhealth-040119-094318

Okoroafor, S. C., & Christmals, C. D. (2023). Task shifting and task sharing implementation in Africa: A scoping review on rationale and scope. Healthcare, 11(8), Article 1200. https://doi.org/10.3390/healthcare11081200

Oladayo, A. M., Lawal, F. B., Sofola, O. O., Uti, O. G., Oyapero, A., Aborisade, A., ... Butali, A. (2025a). Evaluation of the oral health education for nurses and community health workers (Project OHE-NCHeW) in Nigeria. International Dental Journal, 75(5), Article 100891. https://doi.org/10.1016/j.identj.2025.100891

Oladayo, A. M., Lawal, F. B., Sofola, O. O., Uti, O. G., Oyapero, A., Aborisade, A., ... Butali, A. (2025b). Integrating oral health into primary healthcare: Lessons from Project OHE-NCHeW (oral health education for nurses and community health workers) in Nigeria. Frontiers in Oral Health, 6, Article 1597243. https://doi.org/10.3389/froh.2025.1597243

Osuh, M. E., Oke, G. A., Lilford, R. J., Osuh, J. I., Lawal, F. B., Gbadebo, S. O., ... Adedokun, B. (2023). Oral health in an urban slum, Nigeria: Residents' perceptions, practices and care-

seeking experiences. BMC Oral Health, 23, Article 657. https://doi.org/10.1186/s12903-023-03303-5

Peres, M. A., Macpherson, L. M. D., Weyant, R. J., Daly, B., Venturelli, R., Mathur, M. R., ... Watt, R. G. (2019). Oral diseases: A global public health challenge. The Lancet, 394(10194), 249–260. https://doi.org/10.1016/S0140-6736(19)31146-8

Prasad, M., Manjunath, C., Murthy, A. K., Sampath, A., Jaiswal, S., & Mohapatra, A. (2019). Integration of oral health into primary health care: A systematic review. Journal of Family Medicine and Primary Care, 8(6), 1838–1845. https://doi.org/10.4103/jfmpc.jfmpc_286_19

Shomuyiwa, D. O., & Bridge, G. (2023). Oral health of adolescents in West Africa: Prioritizing its social determinants. Global Health Research and Policy, 8, Article 28. https://doi.org/10.1186/s41256-023-00313-2

Uguru, N., Onwujekwe, O., Ogu, U. U., & Uguru, C. (2020). Access to oral health care: A focus on dental caries treatment provision in Enugu, Nigeria. BMC Oral Health, 20, Article 145. https://doi.org/10.1186/s12903-020-01135-1

Urquhart, O., Matanhire-Zihanzu, C. N., Kulkarni, R., Parrado, E. A., Aljarahi, H., Bhosale, A. S., ... Carrasco-Labra, A. (2024). Oral health policy and research capacity: Perspectives from dental schools in Africa. International Dental Journal, 74(4), 722–729. https://doi.org/10.1016/j.identj.2024.01.020

Verdugo-Paiva, F., Urquhart, O., Matanhire-Zihanzu, C. N., Castro Martins-Pfeifer, C., Booth, E., Booth, H. A., ... Carrasco-Labra, A. (2024). Barriers to and facilitators for creating, disseminating, implementing, monitoring and evaluating oral health policies in the WHO African Region: A scoping review. Community Dentistry and Oral Epidemiology, 52(6), 775–785. https://doi.org/10.1111/cdoe.12984

World Health Organization. (2022a). Oral health: Nigeria 2022 country profile. https://www.who.int/publications/m/item/oral-health-nga-2022-country-profile

World Health Organization. (2022b). Oral health: Somalia 2022 country profile. https://cdn.who.int/media/docs/default-source/country-profiles/oral-health/oral-health-som-2022-country-profile.pdf

World Health Organization. (2024). Global strategy and action plan on oral health 2023–2030. https://iris.who.int/server/api/core/bitstreams/022cde3b-a0d8-440e-8b5e-7ab5a90f89e6/