REVIEW ARTICLE

Barriers to addiction-related care during pregnancy in Nigeria: a scoping review and health system policy analysis

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Abstract

Substance-related exposures in pregnancy are documented across Nigeria, but their integration into antenatal care remains unclear. This scoping review and health-system policy analysis mapped empirical evidence on these exposures among pregnant women and examined barriers to perinatal addiction-related care. Addiction-related care is understood here as screening, risk assessment, counselling, documentation, referral, and treatment. Five databases were searched on 6 April 2026; 23 empirical studies were synthesised with national policy documents and clinical guidelines using the WHO health-systems building blocks framework. Alcohol, herbal preparations, kolanut, self-medication with pharmaceuticals, and psychoactive substances including opioids were reported across all six geopolitical zones. No included study described routine screening, standardised documentation, structured referral, or integrated perinatal addiction-care pathways. Barriers included fragmented service delivery, workforce gaps, weak information systems, restricted pharmacotherapy access, financing constraints, stigma, and criminalisation. Non-punitive screening and referral pathways should be integrated into antenatal care to improve maternal and newborn outcomes. *(Afr J Reprod Health 2026; 30 [10]:114-131).*

Keywords: pregnancy; substance use; Nigeria; scoping review; health systems; antenatal care

Résumé

Les expositions liées aux substances psychoactives pendant la grossesse sont documentées à travers le Nigéria, mais leur intégration dans les soins prénatals demeure peu claire. Cet examen de la portée et analyse des politiques du système de santé a cartographié les données empiriques relatives à ces expositions chez les femmes enceintes et examiné les obstacles aux soins périnatals liés aux addictions. Les soins liés aux addictions sont entendus ici comme le dépistage, l'évaluation des risques, le counseling, la documentation, l'orientation et le traitement. Cinq bases de données ont été interrogées le 6 avril 2026 ; 23 études empiriques ont été synthétisées avec les documents de politique nationale et les lignes directrices cliniques en utilisant le cadre des piliers des systèmes de santé de l'OMS. L'alcool, les préparations à base de plantes, la noix de kola, l'automédication par produits pharmaceutiques et les substances psychoactives, dont les opioïdes, ont été rapportés dans les six zones géopolitiques. Aucune étude incluse n'a décrit de dépistage systématique, de documentation standardisée, d'orientation structurée ou de parcours intégrés de soins périnatals liés aux addictions. Les obstacles comprenaient la fragmentation des services, les lacunes en personnel, la faiblesse des systèmes d'information, l'accès restreint à la pharmacothérapie, les contraintes de financement, la stigmatisation et la criminalisation. Des parcours non punitifs de dépistage et d'orientation devraient être intégrés aux soins prénatals afin d'améliorer les résultats maternels et néonatals. *(Afr J Reprod Health 2026; 30 [10]: 132-140).*

Mots-clés: grossesse ; consommation de substances ; Nigéria ; examen de la portée ; systèmes de santé ; soins prénatals.

Introduction

Substance use during pregnancy is an under-recognised but clinically important contributor to adverse maternal and neonatal outcomes in Nigeria. Empirical studies across all six geopolitical zones consistently document antenatal exposure to alcohol,[1] herbal and traditional preparations,[2] and self-medication with orthodox and over-the-counter pharmaceuticals.[3] Kolanut and other caffeine-

containing stimulants have also been reported as pregnancy-specific exposures used for nausea and fatigue relief,[4] while smaller studies describe tobacco, cannabis, codeine, and tramadol use among antenatal populations.[5,6] These exposures are biologically plausible contributors to miscarriage, fetal alcohol spectrum disorders, preterm birth, low birthweight, neonatal abstinence symptoms, and longer-term neurodevelopmental impairment.[7–9] The existing Nigerian literature on substance use in pregnancy has focused primarily on prevalence and correlates, with limited attention to how routine antenatal care identifies or responds to these exposures.

This review applies a broad substance-exposure lens, encompassing the full range of exposures documented among pregnant women in Nigeria, from licit substances and traditional preparations to psychoactive medicines used in self-medication. This reflects the clinical reality of antenatal care, where frontline providers are often the first point of contact for identifying potentially harmful exposures. Not all such exposures constitute substance use disorders requiring specialised treatment. However, they all require some combination of screening, risk assessment, counselling, documentation, and referral where appropriate. Addiction-related care is therefore conceptualised here as a continuum of antenatal and perinatal care, rather than as formal addiction treatment alone.

Major international guidelines, including those of the World Health Organization,[10] the American College of Obstetricians and Gynecologists,[11] the Society of Obstetricians and Gynaecologists of Canada,[12] the National Institute for Health and Care Excellence,[13] and the Substance Abuse and Mental Health Services Administration,[14] converge on core principles: universal antenatal screening, non-judgmental clinical engagement, brief intervention, integrated psychosocial support, and access to medication-assisted treatment for opioid use disorder where indicated. These frameworks also emphasise coordinated obstetric, mental-health, and addiction services, continuity across pregnancy and the postpartum period, and avoidance of punitive responses that deter care-seeking. Comparable standards have not been institutionalised in Nigerian maternal-health and drug-control policies.[15–17] Existing national frameworks provide limited pregnancy-specific guidance, do not mandate routine screening, and do not define structured service-delivery models or referral pathways for pregnant women who use substances.[15,16,18]

This policy and practice gap reflects broader health-system constraints. Nigeria operates a three-tier federal health system in which the Federal Ministry of Health sets national policy, while state and local government areas deliver most primary and secondary care. Specialised addiction and mental-health services are concentrated in a limited number of federal and state tertiary facilities, leaving lower-tier antenatal services without routine access to addiction expertise.[16,19] This service-distribution gap is reinforced by broader institutional arrangements governing substance use in Nigeria. Drug-control activity is led by the National Drug Law Enforcement Agency, a federal law-enforcement body whose mandate centres on enforcement and supply reduction rather than treatment provision, shaping how substance use is framed across the health and justice sectors.[17,20]

Although national strategies prioritise reductions in maternal and neonatal mortality, they do not explicitly address substance use in pregnancy or clinical management pathways.[18] Drug-control frameworks remain largely enforcement-oriented rather than health-centred, leaving pregnant women with limited clarity on legal protections and accessible, non-punitive pathways to care following disclosure in clinical settings.[17,21] These omissions create missed opportunities for early identification and intervention, with consequences for both maternal and infant health.

The Nigerian empirical literature provides valuable evidence on the prevalence, correlates, and community beliefs surrounding substance use in pregnancy. However, no prior review has synthesised this evidence alongside the policy, legal, and health-systems context that shapes access to addiction-related care during pregnancy. Such a synthesis is needed to inform context-appropriate screening, referral pathways, and perinatal addiction-care models that can improve maternal and neonatal outcomes in Nigeria. It is also timely because structural inequities in global health knowledge production are increasingly recognised, and African empirical work is frequently published

in regional journals outside major indexing services and remains under-represented in mainstream syntheses.[22,23]

Accordingly, this scoping review and health-system policy analysis aimed to: (i) map and synthesise empirical evidence on substance use and related care practices among pregnant women receiving antenatal care in Nigeria; and (ii) analyse the structural, clinical, and regulatory factors shaping access to addiction-related care during pregnancy, benchmarking Nigerian policies and services against international guidance using the World Health Organization six health-systems building blocks framework.[24]

Methods

Study design

We conducted a scoping review using the framework developed by Arksey and O'Malley,[25] and refined by Levac and colleagues,[26] with reporting guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR).[27] A scoping review design was selected because the field of perinatal addiction care in Nigeria is heterogeneous, encompassing clinical epidemiology, health-services research, traditional and complementary medicine literature, and policy documents that would not be amenable to a narrowly defined systematic review question. The review combined an empirical literature synthesis with a structured policy analysis using the World Health Organization (WHO) six health-systems building blocks as an organising framework.[24] The review protocol was developed a priori by the two reviewers (OMA, AA) and was not registered prospectively, in keeping with the typical conventions for scoping reviews.

Search strategy and data sources

A structured literature search was conducted on 6 April 2026 across five electronic databases: PubMed (NLM/MEDLINE), Scopus (Elsevier), Web of Science Core Collection (Clarivate), CINAHL Complete (EBSCO), and African Journals Online (AJOL). The decision to include AJOL alongside the four major bibliographic databaseswas made to address the structural under-representation of African empirical research in mainstream indexing services and to maximise capture of Nigerian primary studies published in regional journals.

The search combined three concept blocks: (i) substance-use exposures (including alcohol, tobacco, smoking, cannabis, opioids, tramadol, codeine, kolanut, kola nut, caffeine, herbal medicine, traditional medicine, complementary and alternative medicine, self-medication, over-the-counter medicines, and psychoactive substances), (ii) the perinatal population (including pregnancy, pregnant women, antenatal, prenatal, gestation, perinatal, and postpartum), and (iii) the geographic setting (Nigeria, Nigerian, and the six geopolitical zones). Boolean operators, truncation, and database-appropriate field tags were applied. The full search strategies for each database are provided in the Appendix. Citation searching of the reference lists of included studies was undertaken as a supplementary identification method to capture eligible Nigerian empirical work that was not retrieved through the structured database searches.

Eligibility criteria

Studies were eligible for inclusion if they met all of the following criteria: (i) reported empirical data on the use of alcohol, tobacco, herbal or traditional preparations, kolanut, self-medication with orthodox or over-the-counter pharmaceuticals, or other psychoactive substances; (ii) were conducted among pregnant women receiving antenatal care in Nigeria, or included a clearly identifiable Nigerian subgroup; (iii) used any quantitative, qualitative, or mixed-methods design including cross-sectional surveys, cohort studies, case-control studies, qualitative interviews, focus groups, and mixed methods; and (iv) were published in English in a peer-reviewed journal.

There was no lower date limit. Studies were excluded if they were conference abstracts, editorials, commentaries, letters without primary data, narrative or systematic reviews without unique empirical contributions, or studies whose population could not be disaggregated to a Nigerian pregnant sample. Policy documents, clinical practice guidelines, government reports, and grey literature were considered separately for the policy analysis component and are described in the Appendix.

Policy, legal, and professional society document retrieval

National policy, legal, and strategic documents were identified through targeted manual searches conducted on 8 April 2026 of the official websites of the Federal Ministry of Health (health.gov.ng), the National Drug Law Enforcement Agency (ndlea.gov.ng), the National Bureau of Statistics (nigerianstat.gov.ng), the United Nations Office on Drugs and Crime Nigeria country office (unodc.org/nigeria), and the Federal Government of Nigeria gazette repositories. Search terms combined pregnancy-related terms (pregnancy, antenatal, maternal health, perinatal, newborn) with substance-use and mental-health terms (substance use, drug use, alcohol, opioid, tramadol, codeine, cannabis, tobacco, mental health, addiction). To assess whether national professional society guidance on perinatal addiction-related care exists, we additionally searched the official websites of the Society of Gynaecology and Obstetrics of Nigeria (sogon.org), the Association of Psychiatrists in Nigeria (apn.org.ng), and the Nigerian Medical Association (thenma.ng), using the same search terms. Documents were eligible for inclusion if they set national policy, law, strategy, or clinical practice guidance with direct bearing on maternal, newborn, mental-health, drug-control, or addiction services in Nigeria and were in force at the time of retrieval. "Retrieval and eligibility assessment were conducted independently by both reviewers (OMA, AA), with disagreements resolved by consensus; persistent disagreements were adjudicated by the third reviewer (IO)."

Study selection and screening

All retrieved records were uploaded into Covidence (Veritas Health Innovation, Melbourne, Australia), which automatically removed exact-match duplicates at the import stage. "Title and abstract screening was conducted independently by both reviewers (OMA, AA) using a dual-reviewer model, with conflicts resolved by discussion and, where unresolved, adjudicated by the third reviewer (IO)." Full-text articles were then retrieved for all records judged potentially eligible at title and abstract screening, and full-text eligibility was assessed independently by both reviewers against the predefined inclusion and exclusion criteria. "Disagreements were resolved by consensus, with unresolved cases adjudicated by the third reviewer (IO)." During a secondary dual-reviewer audit of the title and abstract screening decisions, one study (Tamuno and colleagues, 2010)[28] that had initially been excluded as irrelevant was identified by both reviewers as meeting the inclusion criteria; the original exclusion decision was reversed and the study was reinstated to full-text review, where it was confirmed eligible and included. This decision is documented transparently in the screening log and is reflected in the PRISMA flow diagram (Figure 1). Citation searching of the reference lists of included studies was conducted in parallel and identified two additional eligible studies that had not been retrieved through the structured database searches; both were imported into Covidence under the "other sources" source category, screened against the same eligibility criteria, and included.

Data extraction

A piloted data extraction template was used to extract the following from each included study: first author, year of publication, journal, study design, geographic setting (state and geopolitical zone), study population and sample size, sampling method, screening or measurement instrument, exposure category (alcohol, herbal or traditional, kolanut, self-medication, psychoactive substances, polysubstance), reported prevalence or pattern of use, identified determinants or correlates, reported outcomes, and authors' conclusions. "Data extraction was conducted by the first reviewer (OMA) and verified independently by the second reviewer (AA), with discrepancies resolved by discussion and, where unresolved, adjudicated by the third reviewer (IO)." Where reported prevalence figures differed across an article (for example, lifetime versus current use, or any substance versus a specific substance), all relevant figures were extracted to preserve the granularity of the source data.

Synthesis and policy analysis

Empirical findings were synthesised narratively and organised by exposure category. Quantitative pooling was not undertaken given the heterogeneity in study populations, settings, time periods, screening instruments, and prevalence definitions across the included studies. Health-systems barriers were extracted from the empirical literature and

from the policy and guideline documents and mapped to the six WHO health-systems building blocks: service delivery; health workforce; health information systems; access to essential medicines; financing; and leadership and governance.[24] National-level policy documents were retrieved from the websites of the Nigerian Federal Ministry of Health, the National Drug Law Enforcement Agency, and the United Nations Office on Drugs and Crime, and included the National Health Policy, the Nigeria Every Newborn Action Plan, the Second National Strategic Health Development Plan, the National Health Act, the National Drug Use Survey, the National Drug Control Master Plan, and the National Mental Health Act.[15–21] International clinical practice guidelines were drawn from the World Health Organization,[10] the American College of Obstetricians and Gynecologists,[11,29] the National Institute for Health and Care Excellence,[13] the Society of Obstetricians and Gynaecologists of Canada,[12] and the Substance Abuse and Mental Health Services Administration.[14] Recent global evidence syntheses on perinatal substance use disorders were also included as external benchmarks.[30–32] All sources were reviewed for content relevant to perinatal substance use, antenatal screening, treatment access, and reproductive rights.

Ethics

This scoping review used only published literature and publicly available policy documents and therefore did not require institutional research ethics review.

Results

A total of thirty Nigerian documents informed the analysis: twenty-three empirical studies reporting substance use among pregnant women receiving antenatal care (Table 1, refs [1–6,28,33–48]) and seven national policy, legal, or strategic documents (Table 2, refs [15–21]). The empirical studies were conducted across all six geopolitical zones of Nigeria and included antenatal clinic surveys, community-based studies, and prospective cohort data. They documented the use of alcohol, herbal and traditional preparations, psychoactive medicines, non-prescription pharmaceuticals, kolanut and other caffeine-containing stimulants, tobacco, and, less commonly, opioids and cannabis during pregnancy. National policy and legal documents were reviewed for provisions related to maternal-health priorities, health-system organisation, drug-control structures, mental-health legislation, and perinatal substance-use care. International clinical guidelines[10–14,29] and recent global evidence syntheses[30–32] served as comparative benchmarks. The full inclusion list and study characteristics are presented in Table 1, and the policy and guideline documents in Table 2. The PRISMA flow of study identification, screening, and inclusion is shown in Figure 1.The synthesis was organised into six interrelated system-level barrier domains relevant to addiction-related care during pregnancy in Nigeria. These domains are presented below and mapped to the World Health Organization health-systems building blocks in Table 3.

Structural and system-level gaps

Across the empirical literature, substance use during pregnancy was reported in antenatal populations, but structured perinatal addiction services were not described within antenatal care settings. Alcohol use was reported, with prevalence estimates ranging from approximately 12% in some northern samples to over 40% in eastern and southern populations, depending on region, beverage type, and screening instrument used.[1,33,35] Herbal and traditional medicine use was reported across the South East, South South, South West, and Middle Belt and was typically linked to cultural beliefs, perceived safety, and symptom relief. Recent studies from Nsukka,[40] Uyo,[41] Benin City,[42] and Ibadan[2] reported current-pregnancy prevalence between approximately 19% and 38%, with predominant first-trimester use, while an earlier study from Northern Nigeria reported use in around 31% of women attending tertiary antenatal care.[28] Self-medication with orthodox and over-the-counter pharmaceuticals was documented in both community- and facility-based samples, with prevalence reaching 72% in a Niger Delta general-hospital sample[43] and 28.6% self-prescription in a more recent Ogun State study.[44] Kolanut consumption was reported in 33.9% of pregnant women attending antenatal care in Ibadan, with most users consuming kolanut for nausea and vomiting relief.[4] Psychoactive substances, including tobacco, sedatives, codeine-containing cough preparations, tramadol, and cannabis, were reported less frequently but were documented across multiple regions[47] and were associated with

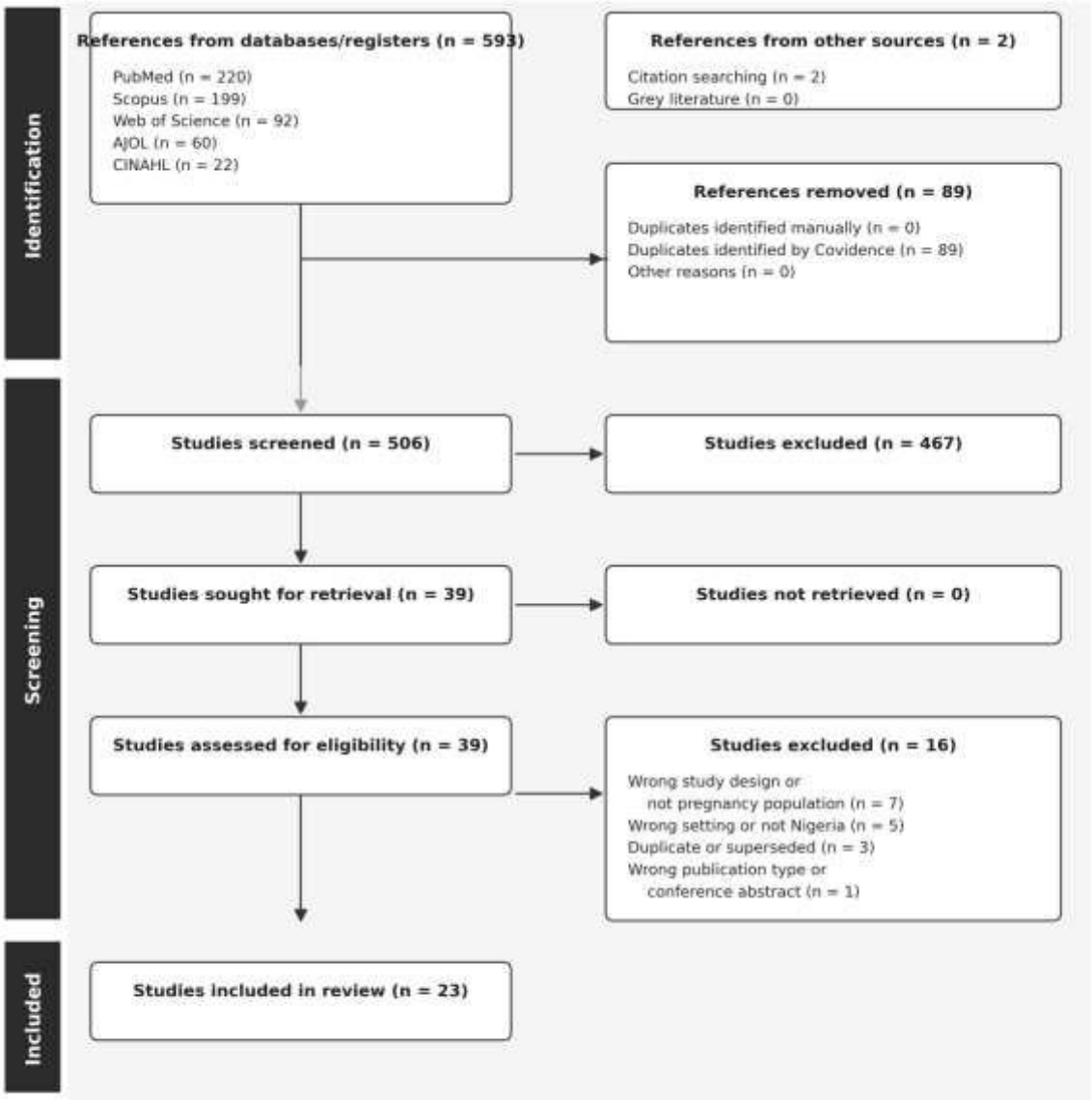

Figure 1: PRISMA-ScR flow diagram of study identification, screening, and inclusion. A total of 595 records were identified: 593 from five bibliographic databases (PubMed n = 220; Scopus n = 199; Web of Science n = 92; African Journals Online n = 60; CINAHL n = 22) and 2 from citation searching of the reference lists of included studies. After removal of 89 duplicate records, 506 records were screened by title and abstract, of which 467 were excluded as off-topic, off-population, or off-setting. Thirty-nine full-text articles were assessed for eligibility, and 16 were excluded for the following reasons: wrong study design or not pregnancy population (n = 7); wrong setting or not Nigeria (n = 5); duplicate or superseded by a later report (n = 3); and wrong publication type or conference abstract (n = 1). Twenty-three studies met all inclusion criteria and were included in the final synthesis. One study (Tamuno et al. 2010) had been initially excluded at title and abstract screening but was reinstated during a dual-reviewer screening audit, where both reviewers independently confirmed it met the inclusion criteria; this reversal is documented in the Methods and limitations sections.

Table 1: Characteristics of the 23 included Nigerian empirical studies on substance use during pregnancy, organised by primary exposure category

S/N	First Author (Year)	Location	Setting / Sample	Design	Main Exposure(s)	Key Contribution
A. Alcohol use in pregnancy						
1	Okonkwo & Uwakwe (2003)	South East	ANC, teaching hospital (n=1,160)	Cross-sectional	Alcohol; OTC medicines	Early evidence of alcohol use, OTC misuse, and low awareness of substance-use risks in pregnancy.
2	Ordinioha & Brisibe (2015)	South South	Tertiary ANC	Cross-sectional	Alcohol (beer, palm wine, spirits)	Quantified alcohol use; sociodemographic correlates; cultural normalisation of consumption.
3	Onwuka et al. (2016)	South East	Hospital ANC (n400)	Cross-sectional	Alcohol	Prevalence and predictors including unplanned pregnancy and partner drinking.
4	Usifoh et al. (2018)	South South	Community sample (n=600)	Cross-sectional	Alcohol	29.3% prevalence; poor awareness of fetal alcohol syndrome; cultural misconceptions about safety.
5	Mbadugha et al. (2022)	South East	General hospital ANC	Cross-sectional	Alcohol	Prenatal alcohol intake and knowledge of effects in eastern Nigeria; identified through citation searching.
6	Adeoye (2022)	South West (Ibadan)	Cohort baseline (n=1,745)	Prospective cohort	Alcohol and tobacco	Largest Nigerian cohort to date (n=1,745); predictors and pattern data reported for both exposures.
B. Herbal and traditional medicine use in pregnancy						
7	Tamuno et al. (2010)	North West (Kano)	Aminu Kano Teaching Hospital ANC	Cross-sectional	Herbal medicine	Early northern Nigerian study; ≈31% prevalence; cultural drivers and limited provider counselling.
8	Achema et al. (2012)	Multi-site, Nigeria	Pregnant women, multi-centre	Cross-sectional	Herbal drugs	Multi-centre evaluation of herbal drug use in pregnancy in Nigeria.
9	Duru et al. (2016)	South East (Imo)	FMC Owerri tertiary clinic (n500)	Cross-sectional	Herbal medicine	High prevalence of herbal use; sociodemographic determinants including education, income, and parity.
10	Adeoye & Etuk (2023)	South West (Ibadan)	Ibadan Pregnancy Cohort (n=571)	Cohort sub-study	Unprescribed and herbal medicine	21.7% herbal and 31.9% unprescribed medicine prevalence; predictors and links to pregnancy outcomes.
11	Dim et al. (2024)	South East (Nsukka)	ANC (n=400)	Cross-sectional	Herbal medicine	Knowledge and attitudes; 71.2% positive attitude; 66.2% good knowledge; trimester patterns documented.
12	Jackson et al. (2024)	South South (Uyo)	Three secondary hospitals (n=650)	Cross-sectional	Herbal medicine	19.4% current-pregnancy and 35.3% previous-pregnancy prevalence; fluted pumpkin and ginger most common; first-trimester predominance.
13	Amanesi et al. (2025)	South South (Benin City)	Six health facilities (tertiary + PHC) (n=171)	Cross-sectional	Herbal and CAM	38% daily herbal use; 35.1% first-trimester predominance; PHC-tier data; mixed safety perceptions.
C. Self-medication and over-the-counter pharmaceuticals						

14	Abasiubong et al. (2012)	South South (Akwa Ibom)	Three general hospitals (n=518)	Cross-sectional	Self-medication; substance use	72.4% self-medication prevalence; antibiotics, analgesics, antimalarials, haematinics, anthelmintics, and traditional medicine documented.
15	Adanikin & Awoleke (2017)	South West (Ado-Ekiti)	Institutional ANC at term (n=346)	Cross-sectional	Self-medication; antenatal drug consumption	Burden of self-medication during pregnancy in a developing-world setting; pregnancy-complaint and indication-oriented analysis.
16	Akadri et al. (2025)	South West (Ogun, Remo zone)	Three public health facilities (n=262)	Cross-sectional	Self-prescribed orthodox and herbal medicines	28.6% overall self-prescription; 14.9% orthodox and 16.4% herbal; pre-pregnancy alcohol use a strong predictor.
D. Tobacco, opioids, cannabis, sedatives and other psychoactive substances						
17	Adebowale & James (2018)	South South (Benin City)	ANC, Federal Neuropsychiatric Hospital (n=395)	Cross-sectional	Alcohol, tobacco, sedatives, other psychoactives	Links between psychoactive substance use and psychiatric morbidity; demonstrated feasibility of ASSIST screening in Nigerian ANC.
18	Ajogbon et al. (2018)	South West	Tertiary ANC (n130)	Cross-sectional	Psychoactive substances	Lifetime prevalence ≈45% and current use ≈17%; psychosocial correlates including stigma and partner influence.
19	Anusiem & Nwafor (2020)	South East (Enugu)	Multiple ANC clinics	Cross-sectional	Psychoactive substances	Cross-sectional patterns of psychoactive substance use in Enugu antenatal populations; sociocultural drivers.
20	Sulyman et al. (2021)	North East	Teaching hospital ANC (n=320)	Cross-sectional	Tobacco, sedatives, tramadol, codeine, alcohol, cannabis	13.3% overall substance use prevalence; tobacco snuff/cigarette and OTC sleeping pills most common; partner substance use a strong correlate.
E. Kolanut, broad multi-substance and adolescent-specific profiles						
21	Mutihir et al. (2012)	North Central (Jos)	Jos University Teaching Hospital ANC (n557)	Cross-sectional	Alcohol, kolanut, sedatives, tobacco, codeine, cannabis	Multi-substance profile covering alcohol, kolanut, sedatives, tobacco, codeine, and cannabis in Jos antenatal patients; documented perceived benefits and cultural drivers.
22	Atiba et al. (2023)	South West (Ibadan)	ANC (n=478)	Cross-sectional	Kolanut (caffeine)	33.9% kolanut consumption; 93.7% used for nausea and vomiting relief; Hausa ethnicity and traditional birth attendant attendance significantly associated.
23	Otegbayo et al. (2023)	Multi-site (Niger, Lagos, Rivers)	Pregnant adolescents 14–19 years (n=400)	Cross-sectional (PLS-SEM)	Alcohol and psychoactive substances (AUDIT)	Adolescent-specific multi-site evidence; substance use associated with adolescents' sexual decision-making and academic outcomes.

ANC = antenatal care; FMC = Federal Medical Centre; OTC = over-the-counter; CAM = complementary and alternative medicine; PHC = primary health care; ASSIST = Alcohol, Smoking and Substance Involvement Screening Test; AUDIT = Alcohol Use Disorders Identification Test; PLS-SEM = partial least squares structural equation modelling. Studies are organised by primary exposure category; several studies report on multiple exposures and their full exposure profile is shown in the Main Exposure(s) column.

Table 2: Nigerian policy, legal and strategic documents (n = 7) reviewed as part of the national policy analysis, and international clinical guidelines and global evidence (n = 9) used as external benchmarks.

No.	Document (Year)	Type	Issuing Institution	Scope / Population	Relevance to perinatal substance use and key contribution
A. Nigerian policy, legal, and strategic documents (n = 7)					
1	National Health Policy (2016)	Health-systems policy	Federal Ministry of Health	National population; health-system organisation	Maternal health is included among national health priorities, but no perinatal substance-use guidance or addiction-service provisions were identified.
2	Nigeria Every Newborn Action Plan (2016)	Maternal, newborn and child health strategic plan	FMoH / WHO / UNICEF	Pregnant women, newborns, community health workers	Focuses on reducing preventable newborn deaths and strengthening maternal-newborn care; perinatal substance use, addiction screening, and treatment pathways are not addressed.
3	Second National Strategic Health Development Plan (NSHDP II, 2018–2022)	Health-sector strategic plan	Federal Ministry of Health	Health-system planning and financing	Sets health-sector priorities for planning and financing; substance use in pregnancy and antenatal addiction-related care are not addressed.
4	National Health Act (2014)	National health legislation	Federal Republic of Nigeria	National population; health governance	Provides a legal framework for national health governance; provisions for perinatal substance-use identification, referral, or care were not identified.
5	Drug Use in Nigeria (2018)	National epidemiological survey	NBS / UNODC / CRISA	Households aged 15–64	Describes national drug-use patterns among persons aged 15–64 years, including opioid misuse; pregnancy-specific or postpartum disaggregation is not reported.
6	National Drug Control Master Plan (2021–2025)	Drug-control strategy	FMoH / NDLEA / UNODC	Entire population	Addresses drug-control priorities, including enforcement, supply reduction, prevention, and treatment; pregnancy-specific care pathways are not described.
7	National Mental Health Act (2021/2023)	National legislation	Federal Government of Nigeria	Mental-health services and rights	Establishes a legal framework for mental-health services and rights; perinatal addiction guidance and pregnancy-specific referral pathways are not specified.
B. International clinical guidelines and global evidence used as benchmarks (n = 9)					
8	WHO Guidelines for the Identification and Management of Substance Use and Substance Use Disorders in Pregnancy (2014)	Clinical guideline	World Health Organization	Pregnant women with substance use and substance use disorders	Benchmark for screening, brief intervention, and medication-assisted treatment in pregnancy.
9	ACOG Committee Opinion No. 711: Opioid Use and Opioid Use Disorder in Pregnancy (2017)	Clinical guideline	American College of Obstetricians and Gynecologists	Pregnant women with opioid use disorder	Recommends methadone or buprenorphine and trauma-informed care. Illustrates the absence of medication-assisted treatment integration in Nigeria.

10	ACOG Committee Opinion No. 633: Alcohol Abuse and Other Substance Use Disorders: Ethical Issues in Obstetric and Gynecologic Practice (2015)	Ethical and clinical guideline	ACOG	Pregnant women using alcohol or substances	Emphasises non-judgmental, rights-based care. Provides a benchmark against stigmatising and punitive norms.
11	NICE Clinical Guideline 110: Pregnancy and Complex Social Factors (2010)	Service-delivery guideline	National Institute for Health and Care Excellence (UK)	Pregnant women with complex social factors	Integrated antenatal care, addiction, and mental-health pathway. Demonstrates feasible service models that are absent in Nigeria.
12	SOGC Clinical Practice Guideline No. 349: Substance Use in Pregnancy (2017)	National clinical guideline	Society of Obstetricians and Gynaecologists of Canada	Pregnant women using alcohol, tobacco, or other drugs	Screening, harm reduction, medication-assisted treatment, and postpartum continuity. Shows adaptable high-income clinical models.
13	SAMHSA Clinical Guidance for Treating Pregnant and Parenting Women with Opioid Use Disorder and Their Infants (2018)	Clinical and systems guideline	Substance Abuse and Mental Health Services Administration / HHS	Pregnant and parenting women with opioid use disorder	Stepwise care model and integrated mother–baby units. Provides a systems blueprint that is missing in Nigeria.
14	ElNahas and Thibaut, Substance Use Disorders in Pregnancy (2023)	Narrative global review	Journal of Clinical Medicine	Global	Global epidemiology and rising substance-use exposures in pregnancy. Contextualises Nigerian trends within global patterns.
15	Habersham et al., Substance Use Disorders in Pregnancy: Clinical, Ethical, and Research Imperatives (2025)	Expert review	American Journal of Obstetrics and Gynecology	Global, high-income obstetric framing	Epidemiology, maternal and fetal effects, and treatment across nicotine, cannabis, alcohol, benzodiazepines, stimulants, and opioids. Current expert synthesis and benchmark for integrated obstetric and addiction care; emphasises equitable, non-stigmatising care.
16	Andualem et al., Alcohol Consumption During Pregnancy in Africa (2025)	Systematic review and meta-analysis	BMC Psychiatry	Africa (multi-country)	Pooled prevalence and associated factors of alcohol consumption during pregnancy across Africa. Regional benchmark that contextualises Nigerian findings within continental estimates.

FMoH = Federal Ministry of Health; WHO = World Health Organization; UNICEF = United Nations Children's Fund; NBS = National Bureau of Statistics; UNODC = United Nations Office on Drugs and Crime; CRISA = Centre for Research and Information on Substance Abuse; NDLEA = National Drug Law Enforcement Agency; ACOG = American College of Obstetricians and Gynecologists; NICE = National Institute for Health and Care Excellence; SOGC = Society of Obstetricians and Gynaecologists of Canada; SAMHSA = Substance Abuse and Mental Health Services Administration; HHS = United States Department of Health and Human Services; MNCH = maternal, newborn and child health. Only the seven Nigerian policy, legal, and strategic documents in Section A were reviewed as part of the national policy analysis. The nine international clinical guidelines and global evidence sources in Section B were used solely as external benchmarks to compare Nigerian policies and services with international standards of care and were not counted as included empirical studies.

Table 3: Mapping of the six identified barrier domains to the World Health Organization health-systems building blocks.

Barrier domain identified in Results	WHO health-systems building block(s) addressed	Illustrative evidence sources
1. Structural and system-level gaps	Service delivery; Leadership and governance; Health financing	Empirical studies across all six geopolitical zones documenting alcohol, herbal, kolanut, self-medication and psychoactive substance use without structured perinatal addiction services; National Health Policy (2016); Nigeria Every Newborn Action Plan (2016); NSHDP II (2018–2022).
2. Health-workforce and capacity constraints	Health workforce; Service delivery	Empirical studies showing absent routine screening, no providers trained in addiction medicine in antenatal care, and one-off research-context use of validated tools; international guidance from WHO, ACOG, SOGC, NICE, and SAMHSA; expert synthesis from Habersham et al. (2025); regional benchmark from Andualem et al. (2025).
3. Stigma, discrimination, and criminalisation	Leadership and governance; Service delivery	Empirical studies documenting non-disclosure due to fear of judgement, cultural normalisation of substance use during pregnancy, and reinforcement by traditional birth attendants and family members; National Drug Control Master Plan (2021–2025); National Mental Health Act (2021/2023).
4. Socioeconomic and gender-power inequities	Service delivery; Leadership and governance	Empirical studies showing associations with low income, limited education, younger maternal age, partner substance use, and constrained autonomy in health decision-making; multi-site adolescent study (Otegbayo et al. 2023); global evidence on social and structural determinants of perinatal substance use.
5. Service-delivery and clinical-practice barriers	Service delivery; Health information systems; Access to essential medicines	Empirical studies showing absent validated screening tools (AUDIT-C, ASSIST, 4Ps Plus, NIDA Quick Screen), inconsistent documentation, no integration of medication-assisted treatment, and no pregnancy-specific referral pathways; international guidance from WHO, ACOG, NICE, and SAMHSA.
6. Policy, legal, and regulatory barriers	Leadership and governance; Health financing; Access to essential medicines	National Health Policy, Nigeria Every Newborn Action Plan, NSHDP II, National Health Act, National Drug Control Master Plan, and National Mental Health Act, all of which lack perinatal substance-use guidance; international guidelines (WHO, ACOG, NICE, SOGC, SAMHSA) used as benchmarks.

Barriers frequently spanned multiple WHO health-systems building blocks, reflecting the interconnected nature of perinatal substance-use care. Cross-cutting issues such as stigma, gender inequity, and criminalisation intersected with service delivery and governance across all six domains. Abbreviations as defined in Tables 1 and 2.

psychiatric morbidity[5] and adverse psychosocial outcomes, including among pregnant adolescents.[48] The National Health Policy, the Nigeria Every Newborn Action Plan, and the Second National Strategic Health Development Plan did not reference perinatal substance use or outline mechanisms for integrating addiction-related care into antenatal care.[15,16,18] Drug-sector documents, including the National Drug Control Master Plan and the 2018 National Drug Use Survey, addressed drug control and national drug-use patterns but did not identify pregnant women as a priority population or describe pregnancy-specific care pathways.[17,20]

Health-workforce and capacity constraints

The reviewed empirical literature did not describe routine, systematised screening for substance use within antenatal care workflows, integration of validated screening tools into standard antenatal care practice, or involvement of clinicians trained in addiction medicine or perinatal mental health (Table 1). In settings such as Enugu, Jos, Port Harcourt, Ibadan, and Benin City, provider-initiated assessment, structured counselling, and defined referral pathways for pregnant women who used alcohol, psychoactive medicines, or herbal preparations were not documented. Where screening was undertaken, it was conducted as part of one-off research protocols using instruments such as the Alcohol, Smoking and Substance Involvement Screening Test, the Alcohol Use Disorders Identification Test, or modified World Health Organization questionnaires, and was not embedded in routine clinical care or linked to follow-up or treatment pathways.[5,6,48]

Stigma, discrimination, and criminalisation

Narrative findings across several included studies described stigma and fear of judgement as factors affecting disclosure. Pregnant women reported using alcohol, herbal mixtures, kolanut, or psychoactive medicines privately due to fear of judgement from healthcare providers, partners, and community members.[4,5,36–38] Studies also documented cultural beliefs about substance use during pregnancy, including alcohol to ease delivery, kolanut to relieve nausea, and herbal preparations to promote strength or protect the fetus; these beliefs were reported across multiple regions and were sometimes reinforced by traditional birth attendants and family members.[4,28,34,40]

Socioeconomic and gender-power inequities

Across studies, substance use during pregnancy was associated with lower household income, limited formal education, younger maternal age, high physical workload, partner substance use, and constrained autonomy in health decision-making.[6,34,36,39] Partner influence and peer norms were reported as psychosocial correlates in tertiary antenatal populations.[45,46] A multi-site study of pregnant adolescents aged 14 to 19 years across Niger State, Lagos, and Port Harcourt reported associations between alcohol and psychoactive substance use and adolescents' sexual decision-making and academic outcomes.[48] Alcohol and herbal preparation use were described as coping strategies for nausea, stress, heavy physical labour, or broader social adversity. Studies also reported sociocultural norms, including partner endorsement of alcohol use and perceptions that herbal remedies are inherently safe because they are natural.[28,35,40]

Service-delivery and clinical-practice barriers

Antenatal care services did not include standardised procedures for screening, documentation, and referral of pregnant women with substance-use concerns in the reviewed literature. Routine use of validated screening tools such as AUDIT-C, ASSIST, the 4Ps Plus, or the NIDA Quick Screen, embedded within antenatal care systems or linked to structured referral pathways, was not described. Documentation of substance use in clinical records was inconsistent or absent across the included studies (Table 1).

Where mental-health services existed, primarily within tertiary hospitals and federal neuropsychiatric facilities, no integrated perinatal addiction pathways were described. Pregnancy-specific referral pathways for opioid agonist therapy and the integration of medication-assisted treatment into routine antenatal care were not described in the empirical literature or policy documents reviewed.[5,19]

Policy, legal, and regulatory barriers

National maternal-health, mental-health, and drug-control frameworks did not define a standard of care for identifying or managing substance use during pregnancy.[15–21] The National Mental Health Act emphasises community-based integration of mental-health services but does not address perinatal addiction care specifically.[19] The National Health Policy and the Nigeria Every Newborn Action Plan do not provide guidance on alcohol, tobacco, psychoactive medicines, or opioid use in pregnancy.[15,18] No publicly accessible national clinical guideline or professional society guidance on perinatal addiction-related care, including guidance from Nigerian obstetrics and gynaecology professional bodies such as the Society of Gynaecology and Obstetrics of Nigeria, was identified among the documents reviewed.

Policy and regulatory documents reviewed did not specify how opioid use disorder in pregnancy should be managed within the health system or outline pathways for integrating opioid agonist therapy into antenatal care.[17,19,20]

Synthesis

‘‘Table 3 maps the six identified barrier domains to the World Health Organization health-systems building blocks.’’

Discussion

Substance use during pregnancy is documented across all six geopolitical zones of Nigeria (Table 1), and international evidence underscores the associated maternal and neonatal risks.[7–9] Yet none of the 23 empirical studies reviewed described routine antenatal screening, standardised documentation, or established referral pathways for pregnant women who use substances. The central contribution of this review is therefore not the reiteration of prevalence patterns, but the demonstration that Nigerian health-system structures have not translated existing evidence into routine perinatal addiction-related care.

Where validated screening tools such as the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST), the Alcohol Use Disorders Identification Test (AUDIT), or modified World Health Organization questionnaires were used, they appeared exclusively in research contexts and were not linked to clinical follow-up or treatment.[5,6,48] This stands in contrast to international standards that emphasise universal screening, non-judgmental engagement, and integrated obstetric, mental-health, and addiction services.[10–14,29] High-income settings now identify integrated, equitable, and non-stigmatising addiction care as the expected standard across nicotine, cannabis, alcohol, benzodiazepines, stimulants, and opioids.[30,31] African meta-analytic data further demonstrate substantial alcohol-use prevalence during pregnancy, a gap that national maternal-health frameworks have not addressed.[32] The challenge in Nigeria is therefore one of implementation rather than knowledge. Validated tools such as AUDIT-C, ASSIST, the 4Ps Plus (Parents, Partners, Past, Pregnancy), and the National Institute on Drug Abuse (NIDA) Quick Screen should transition from research to routine antenatal workflows, supported by provider training in trauma-informed, non-judgmental care.

Kolanut is a culturally significant but caffeine-containing exposure rarely studied as a perinatal risk factor in international literature, and its high prevalence in antenatal populations (33.9% in Ibadan) underscores the need for context-appropriate screening tools that capture exposures specific to West African settings.

At the facility level, the absence of standardised documentation is also a health-information-system gap, not only a clinical-practice gap. Without routine recording of substance-related exposures, antenatal services cannot reliably follow up identified risks, audit care pathways, or generate facility-level surveillance data to inform maternal-health planning.

At the policy level, fragmentation across maternal-health, mental-health, and drug-control frameworks reinforces this implementation gap. National strategies prioritise maternal and neonatal mortality reduction but do not address perinatal substance use or provide operational guidance for screening, referral, or treatment.[15,16,18] This gap is compounded by the orientation of drug-sector policies, which remain enforcement-focused and give limited consideration to pregnant women,[17,20] while existing frameworks offer no explicit safeguards against arrest, discrimination, or adverse child-protection consequences following disclosure.[17,21] Mental-health legislation similarly

promotes community-based care but lacks pregnancy-specific addiction provisions.19 Together, these silos leave frontline antenatal providers without policy backing to deliver evidence-based care. The absence of publicly accessible national professional-society guidance, including from the Society of Gynaecology and Obstetrics of Nigeria and the Association of Psychiatrists in Nigeria, further reinforces this domain-specific omission rather than reflecting a lack of guideline-development capacity.

Developing a national standard of care for perinatal addiction-related care, aligned with international recommendations but adapted to Nigeria's health-system realities, is therefore a defensible policy priority. Such guidance should define expectations for screening, documentation, referral, and follow-up, and include explicit protections for confidentiality and non-punitive care.

Stigma and gender-power inequities further undermine service engagement by shaping both disclosure and behaviour. Across studies, fear of judgement, discrimination, and social consequences discouraged disclosure.[4,5,36–38] This reluctance to disclose occurs within sociocultural contexts that normalise substance use during pregnancy, including alcohol for easing labour, kolanut for nausea, and herbal preparations for strength, reinforced by traditional birth attendants, partners, and family members.[4,28,34,40] These patterns are further embedded within broader structural vulnerabilities: determinants such as low income, limited education, younger maternal age, high physical workload, partner substance use, and constrained autonomy in health decision-making were consistently associated with substance use in pregnancy.[6,34,36,39] Adolescent pregnant women appear particularly affected within this risk environment.[48,49]

The adolescent data extend this pattern by showing that pregnancy, substance use, school disruption, and psychosocial vulnerability can cluster within the same population.[48] Substance use in pregnancy is also associated with measurable psychiatric morbidity in Nigerian samples,[5] indicating that addiction-related care must be integrated with antenatal mental-health support rather than addressed in isolation. Global evidence confirms that poverty, gender inequity, and age intersect to heighten exposure risk and reduce access to care.[7,49] Addressing perinatal addiction-related needs in Nigeria therefore requires multisectoral strategies that confront these underlying social and gender-power inequities.

A major service-delivery gap is the absence of integrated perinatal addiction-care models. Although psychiatric services exist in some tertiary facilities, the empirical literature described no pregnancy-specific addiction pathways, multidisciplinary teams, or functional linkages between antenatal care, mental-health services, and social-support systems (Table 1). This absence of integration reflects a broader service-delivery gap, as high-quality health systems emphasise coordinated, person-centred models that ensure continuity and responsiveness to social context.[24] In the Nigerian context, fragmented care is particularly consequential during pregnancy, when women are most likely to encounter the health system and most in need of coordinated support. Strengthening functional referral and linkage pathways, beginning with facilities that already host psychiatric services, is therefore a defensible service-delivery priority.

Opioid-related care illustrates these systemic gaps. National epidemiological and policy documents describe a substantial opioid-use burden driven by non-medical tramadol and codeine use,[20] and recent commentary highlights the human cost of this crisis.[22,50] Yet no pregnancy-specific guidance exists on managing opioid use disorder or integrating opioid agonist therapy into antenatal care.[17,19,20] Consistent with this policy gap, the empirical literature was silent on pregnancy-specific referral pathways or medication-assisted treatment integration. This reflects an operational integration problem of unclear pathways, limited workforce capacity, and absent linkage mechanisms, rather than a clinical knowledge deficit. Given the documented opioid burden, system preparedness is warranted so that pregnant women with opioid use disorder can access evidence-based treatment through pregnancy-specific pathways.

The Nigerian patterns identified here mirror broader continental trends of clinical and policy under-attention. The visibility of this evidence base, however, is shaped by structural inequities in global health knowledge production. Several included studies were published in regional or open-access venues with limited indexing, yet they provide important empirical data that would otherwise be

absent.[22] Contemporary Nigerian work on opioid harms and the Niger Delta context further illustrates how evidence is generated under conditions that constrain visibility and uptake.[23,50] Interpretation of this evidence base should therefore account for these structural conditions rather than equating venue prestige with empirical validity.

Overall, the findings reveal a cascade of missed opportunities: absent screening and provider capacity at the clinical level; fragmented services and weak information systems at the health-system level; lack of pregnancy-specific guidance in policy frameworks; and stigma and punitive legal norms at the societal level. The recommendations emerging from this review, namely integrating routine screening into antenatal care, establishing functional referral pathways, developing national clinical guidance with professional bodies, and integrating opioid use disorder care into maternal-health services, follow directly from these findings. Coordinated structural reform aligning maternal-health, mental-health, and drug-control policies toward a unified, health-centred approach is essential.

Strengths and limitations

This review has several strengths. To our knowledge, it is the first synthesis to integrate Nigerian empirical evidence on substance use during pregnancy with a structured analysis of national policy, legal, and professional-society documents, mapped to the World Health Organization health-systems building blocks framework.[24] Reporting followed PRISMA-ScR, and screening, full-text eligibility assessment, and data extraction were conducted independently by two reviewers, with disagreements resolved by consensus.[25–27] A dual-reviewer screening audit identified one foundational study that had been excluded in error and reinstated it transparently to final inclusion.[28] The evidence also spans all six geopolitical zones and captures alcohol, herbal and traditional preparations, kolanut, self-medication, and a range of psychoactive substances.

Several limitations should be acknowledged. As a scoping review, the purpose was to map evidence rather than conduct formal quality appraisal or meta-analysis. Most included studies were cross-sectional and relied on self-reported substance use, making them susceptible to social desirability bias and under-reporting, particularly for stigmatised behaviours during pregnancy. Heterogeneity in design, population, setting, and screening instruments precluded quantitative synthesis. The evidence base is also uneven across exposure categories: alcohol, herbal preparations, and self-medication are relatively well represented, whereas pregnancy-specific data on opioids, tobacco, cannabis, and polysubstance use remain sparse. National epidemiological surveys lack pregnancy-specific analyses,[20] and policy analysis necessarily relied on stated policy intent rather than documented implementation because facility-level service-delivery data were limited.

Notwithstanding these limitations, the consistency of findings and their alignment with international evidence support the policy and practice relevance of the implementation gap identified in this review. Strengthening perinatal addiction-related care in Nigeria is feasible within the existing antenatal care platform, but requires four operational steps: integrating validated screening into routine workflows, establishing formal referral pathways, developing national clinical guidance in collaboration with professional bodies, and making pregnancy-specific opioid agonist therapy pathways available. Future research should prioritise pregnancy-specific epidemiological disaggregation, implementation studies of integrated screening and referral models, ‘‘and qualitative work capturing the perspectives of pregnant women and frontline providers.’’

Conclusion

Substance use during pregnancy is documented across all six geopolitical zones of Nigeria, yet antenatal care has not translated this evidence into routine screening, documentation, referral, or integrated perinatal addiction-care pathways. The barriers identified span all six WHO health-systems building blocks and are compounded by stigma, criminalisation, and gender-power inequities. Addressing this gap requires coordinated structural reform that recognises substance-related risk and addiction-related needs as health issues rather than moral failings. Pregnancy-specific pathways for opioid use disorder, including access to evidence-based pharmacotherapy where indicated, should be incorporated into this response. Integrating evidence-based screening into routine antenatal care

and aligning maternal-health, mental-health, and drug-control frameworks around a unified, health-centred approach could strengthen trust in antenatal services, support earlier engagement with care, and improve maternal and newborn outcomes.

Availability of data and materials

All data extracted from the included studies and the policy documents reviewed are presented in the manuscript and in Tables 1 and 2. The full search strategies for each database are provided in the Appendix. The screening log and the data extraction template are available from the corresponding author on reasonable request**.**

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Contribution of authors

OMA conceived the study, designed the search strategy, led the literature search, the policy analysis, and the data synthesis, and drafted the manuscript. AA contributed to dual-reviewer title and abstract screening, dual-reviewer full-text screening, methodological review, and critical revision of the manuscript for important intellectual content, and identified and reinstated one study that had been initially excluded in error during the screening audit. IO served as the third-reviewer arbiter for unresolved screening, eligibility, and data-extraction disagreements, contributed to the conceptual framing of the policy analysis and to the interpretation of findings, and provided critical revision of the manuscript for important intellectual content.

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