

Review Article

Opioid Addiction Medicine in Nigeria: Bridging Clinical Gaps in a Silent Epidemic—A Narrative Review

Ovie Martin Albert

VODP Addiction and Mental Health, Centennial Centre for Mental Health and Brain Injury, Recovery Alberta (Alberta Health Services), Ponoka, Alberta, Canada; Department of Family Medicine, Cumming School of Medicine, University of Calgary, Calgary, Alberta, Canada

Abstract

Opioid use disorder (OUD) is an emerging public-health challenge in Nigeria, driven largely by non-medical use of tramadol and codeine and compounded by limited access to evidence-based care. This narrative review synthesises evidence on the epidemiology, patterns, harms and treatment gaps for OUD in Nigeria and identifies priorities for policy and research. We searched PubMed/MEDLINE, Embase, PsycINFO, the Cochrane Library, African Journals Online, Google Scholar and grey literature from 2005 to 2024 for Nigerian data on non-medical opioid use, clinical harms, opioid agonist therapy (OAT) services, barriers and community supports. Findings were thematically synthesised using Braun and Clarke's framework, with quality appraisal using Joanna Briggs Institute tools and the SANRA scale. Thirty studies were included. The 2019 national drug use survey estimated past-year opioid use at 4.7% (approximately 4.6 million people), with institution-based surveys reporting high lifetime misuse among undergraduates. Reported harms included overdose, seizures, psychiatric comorbidity and injectable pentazocine dependence with severe soft-tissue infections. OAT availability remains highly centralised, with limited community recovery infrastructure. Nigeria's OUD burden is substantial but unevenly characterised, highlighting the need to decentralise OAT, integrate addiction training, strengthen surveillance and expand community supports.

Keywords: opioid use disorder; tramadol; codeine; opioid agonist therapy; Nigeria; Methadone.

***Correspondence:** Dr Ovie Martin Albert, MBBS, MSc, CCFP, ABPM (Addiction Medicine), ISAM-C VODP – Centennial Centre for Mental Health and Brain Injury, Recovery Alberta (Alberta Health Services), PO Box 1000, Ponoka, Alberta T4J 1R8, Canada, Tel: +1 403-783-7688; Toll-free: +1 844-343-7688; Fax: +1 403-783-7610, Email: oviealbert@me.com

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Introduction

Opioid use disorder (OUD) is a chronic relapsing condition characterised by compulsive opioid use despite harmful consequences. From Kano to Calabar, pharmacies once stocked mainly for malaria now report brisk sales of tramadol “extra strength” capsules sold by the blister strip—no prescription required. Behind each strip lies a public health emergency that mirrors a global one: drug use caused about 600 000 deaths in 2019, and nearly eight in ten were opioid-related.¹ Yet worldwide, fewer than one in ten people with opioid use disorder (OUD) ever receive evidence-based care.

Nigeria is far from immune. An estimated 4.6 million Nigerians 4.7 % of the 15–64-year population have taken opioids non-medically.² The chief culprits are tramadol, codeine cough syrups, and (to a lesser extent) diverted morphine preparations, all easily obtainable through informal supply chains that outpace regulation. National treatment guidelines endorse methadone and buprenorphine, but in practice, OAT is available in only a handful of tertiary centres, serving a fraction of those in need.³ Layers of deterrents compound the shortage, including cumbersome narcotics licensing, limited prescriber training, and deeply rooted stigma that colours both professional attitudes and public perception.^{3–5}

Patchwork solutions have begun to surface. Narcotics Anonymous meetings now convene weekly in Lagos and Abuja,⁶ offering peer-led solidarity where formal care is scarce. The Olive Prime in Abuja, Nigeria’s first women-only residential programme provides medically supervised detoxification and transitional care.⁷ Yet structured recovery housing designed to support long-term reintegration remains virtually absent, despite evidence elsewhere that such environments reduce relapse and improve quality of life.⁸ These isolated initiatives underline, rather than fill, the gulf between need and service capacity.^{5,9}

Against this backdrop, a panoramic synthesis of the Nigerian opioid landscape is overdue. This narrative review, therefore, aims to:

1. Profile the epidemiology and evolving patterns of opioid use in Nigeria.
2. Expose the clinical and health systems gaps that hinder effective OAT delivery.
3. Assess the reach of emerging community supports peer groups, residential programmes, recovery housing.
4. Offer evidence-based recommendations for policy, clinical practice, and future research. By mapping what is known and, crucially, what is not this review seeks to light a path toward closing Nigeria’s most urgent clinical gaps in the face of a silent but accelerating opioid epidemic.

Methods

Review Design and Reporting Framework

We conducted a narrative review of the literature on opioid use disorder and opioid-related care in Nigeria. The review was reported in line with PRISMA 2020 guidance, where applicable to narrative syntheses, and informed by established methodological frameworks for narrative and qualitative reviews.¹⁰ A protocol was not prospectively registered, given the narrative and policy-oriented scope of the review.¹¹

Search Strategy and Data Sources

Comprehensive searches were conducted on 2 July 2025 across PubMed/MEDLINE, Embase, PsycINFO, the Cochrane Library, African Journals Online, and Google Scholar. Grey literature was identified through targeted searches of the United Nations Office on Drugs and Crime (UNODC) and the National Drug Law Enforcement Agency (NDLEA). Search terms combined opioid-related keywords (opioid, opioid use disorder, tramadol, codeine, morphine, pentazocine, methadone, buprenorphine, naltrexone) with “Nigeria,” using Boolean operators. Searches were restricted to English-language publications from 1

January 2005 to 31 December 2024. Reference lists of included articles were hand-searched to identify additional relevant sources. Full search strategies are provided in Supplementary Appendix A.

Eligibility Criteria

Eligible sources included peer-reviewed studies, government reports, and grey literature presenting primary Nigerian data on at least one of the following domains: epidemiology and patterns of opioid use, clinical harms, availability of opioid agonist therapy, health-system and regulatory barriers, or community-based and recovery supports. Editorials, opinion pieces lacking empirical data, conference abstracts with insufficient methodological detail, non-English publications, and studies without Nigerian-specific data were excluded.

Study Selection and Data Extraction

All identified records were imported into EndNote for deduplication and subsequently uploaded into Covidence for screening. Title and abstract screening was conducted by the author. Full-text articles meeting inclusion criteria were independently reviewed by the author and a second reviewer with expertise in public health research methods. The second reviewer independently verified study eligibility and reviewed the extracted data for accuracy and completeness. Discrepancies were resolved through discussion and consensus. This independent verification process was implemented to minimise selection and extraction bias.

Data extracted from included studies comprised author, year of publication, study design, setting, population characteristics, sample size, key findings, and relevance to the predefined review domains. Extracted data were recorded in a structured Microsoft Excel spreadsheet.

Quality Appraisal

Methodological quality of included studies was assessed using appropriate established tools based on study design. Quantitative observational studies were appraised using relevant Joanna Briggs Institute (JBI) critical appraisal checklists,¹² while qualitative studies were assessed using the JBI qualitative appraisal tool. For narrative and mixed methods reports, overall reporting quality was considered using the Scale for the Assessment of Narrative Review Articles (SANRA).¹³ Quality appraisal findings were used to inform the interpretation and weighting of evidence rather than to exclude studies, consistent with the narrative review approach.

Overall, most included studies were assessed as moderate to high quality. Common methodological limitations included cross-sectional designs, reliance on self-reported substance use, limited geographic coverage, and small or convenience samples, which constrain generalisability and preclude causal inference.

Data Management and Synthesis

Given the narrative scope and heterogeneity of the included evidence—spanning cross-sectional surveys, facility-based audits, qualitative studies, case series, and policy reports—findings were synthesised narratively rather than statistically. Quality appraisal findings informed the interpretation of evidence, consistent with the aims of a narrative review and the heterogeneity of study designs.

To minimise selection and extraction bias, study eligibility and extracted data were independently verified by a second reviewer, with discrepancies resolved through discussion and consensus. Restriction to English-language publications is acknowledged as a limitation and may have resulted in omission of relevant regional or unpublished reports.

An inductive thematic synthesis was undertaken following Braun and Clarke's six-phase framework.¹⁴ Studies were coded and organised into five a priori domains: epidemiology and prevalence; clinical harms and comorbidities; treatment availability and service delivery; barriers to access; and emerging community-based supports. Themes were iteratively refined to integrate epidemiological, clinical, and policy-relevant insights.

Ethical Considerations

This review synthesised data from publicly available sources and did not involve human participants or identifiable personal data; therefore, institutional ethics approval was not required. The data extraction spreadsheet and supplementary materials are available from the corresponding author upon reasonable request.

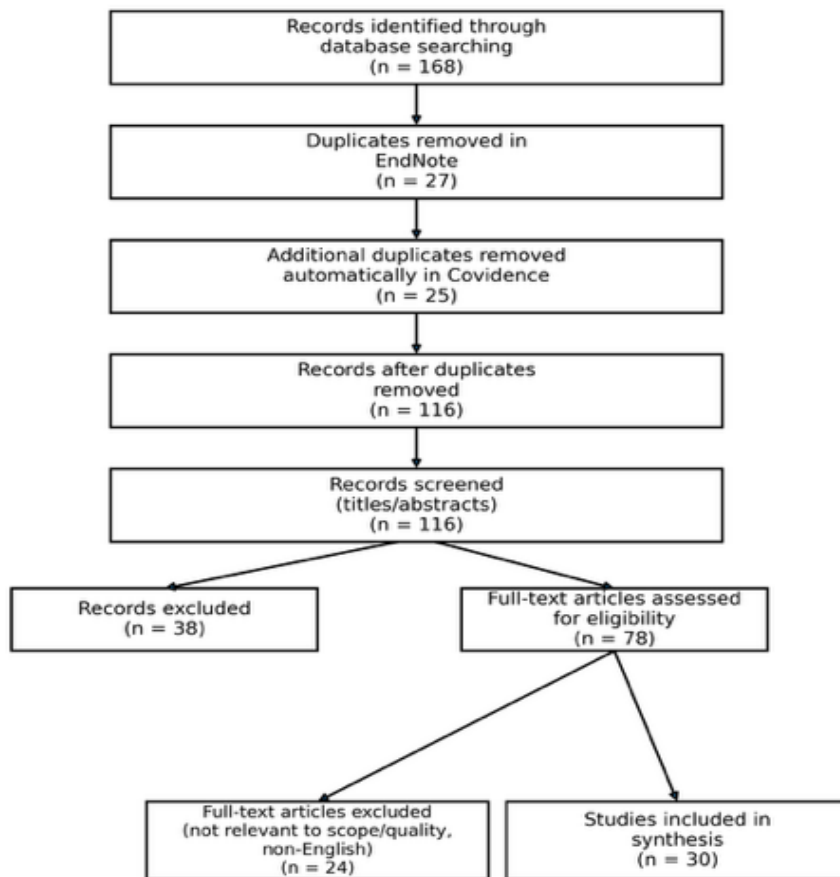


Figure 1. PRISMA flow diagram of record identification, screening, eligibility and inclusion for the narrative review (2005–2024).

Results

Prevalence and Epidemiology

Multiple studies (approximately ten) have examined the prevalence and distribution of non-medical opioid use in Nigeria, with most focusing on tramadol and codeine misuse among youth and urban populations.^{2,15,16} Across these studies, national and regional surveys conducted between 2005 and 2024 indicate a progressive increase in non-medical opioid consumption, although estimates vary substantially by population, setting, and timeframe.

Nigeria's 2019 national household drug use survey reported a past-year prevalence of any drug use (excluding alcohol and tobacco) of 14.4% among adults aged 15–64 years, while past-year non-medical opioid use was estimated at approximately 4.7%, corresponding to about 4.6 million individuals nationwide.² Pharmaceutical opioids—particularly tramadol, codeine, morphine, and pentazocine—accounted for the majority of reported misuse.

Community-based studies demonstrate a clear urban–rural gradient in tramadol misuse. Lifetime prevalence ranged from 3.2% in predominantly rural districts to 5.8% in urban centres, reflecting differences in availability, labour demands, and informal drug markets.² Among younger populations, especially university students, substantially higher rates have been reported. Cross-sectional surveys from tertiary institutions in Lagos and Kano States document combined lifetime tramadol and codeine misuse prevalences of 20–40%, highlighting a concentrated burden among undergraduates.¹⁵

Clinical cohort studies further identify high-risk subpopulations. Among individuals with sickle cell disease, pentazocine dependence has been reported in up to 31% of patients, frequently associated with unsafe injection vascular injury.^{17,18}

Key prevalence estimates, study populations, substances involved, and reporting timeframes are summarised in Table 1 to facilitate comparison across heterogeneous data sources.

Table 1. Prevalence of Non-medical Opioid Use in Nigeria

Author / Year	Study setting	Population	Opioid(s) assessed	Timeframe	Prevalence (%)	Key notes/limitations
UNODC & NDLEA, 2019	National (36 states + FCT)	General population (15–64 years)	Tramadol, codeine, morphine, pentazocine	Past-year	4.7% (opioids); 14.4% (any drug use)	Nationally representative household survey; excludes alcohol and tobacco; relies on self-report
Atoyebi et al., 2017	Rural communities	General adult population	Tramadol	Lifetime	3.2%	Rural agrarian districts; limited

	es (South-West)					geographic generalisability
Lawal et al., 2018	Urban centres (Lagos)	General adult population	Tramadol	Lifetime	5.8%	Urban sample: higher availability and informal markets
Abdullahi et al., 2019	Lagos State	University undergraduates	Tramadol, codeine	Lifetime	20–40%	Self-reported use: high risk of recall and social desirability bias
Mohammed et al., 2020	Kano State	University undergraduates	Tramadol, codeine	Lifetime	23–38%	Cross-sectional design; male-predominant sample
Adegoke et al., 2016	Tertiary hospital (South-West)	Sickle cell disease cohort	Pentazocine	Current dependence	Up to 31%	Clinical cohort: Injection-related complications are common
Okafor et al., 2021	Teaching hospital (South-East)	Chronic pain patients	Pentazocine	Current use	18–25%	Facility-based; not generalisable to community populations

Abbreviations: UNODC – United Nations Office on Drugs and Crime; NDLEA – National Drug Law Enforcement Agency.

Patterns of Opioid Use

Approximately nine studies provided descriptive or clinical accounts of opioid use behaviours in Nigeria, focusing on initiation pathways, motivations for use, self-medication practices, and patterns of polysubstance consumption.^{15–18} Across these reports, tramadol emerged as the most frequently misused opioid, commonly obtained without a prescription and used to manage work-related fatigue, untreated pain, or emotional distress. Sustained misuse has been associated with dependence, seizures, and a range of neuropsychiatric symptoms.^{17–19}

Codeine misuse largely occurs through diversion of cough preparations and is reported predominantly among adolescents and young adults, particularly in academic settings, where it is consumed for its euphoric and anxiolytic effects.¹⁵ Morphine misuse appears less prevalent and is typically confined to diversion from medical settings, featuring mainly in hospital-based case series of opioid poisoning.¹⁶

Pentazocine misuse—both oral and injectable—represents a distinct and clinically significant pattern, especially among individuals with chronic pain conditions and sickle cell disease. Injectable use is strongly associated with dependence and severe local complications, including abscesses and tissue necrosis at

injection sites.^{17,18} These overlapping patterns of opioid and non-opioid substance use contribute to increased clinical complexity and elevate the risk of acute and chronic harms.

Clinical Harms and Comorbidities

Approximately seven studies reported on the health consequences of non-medical opioid use in Nigeria, documenting a spectrum of acute and chronic harms ranging from overdose and injection-related infections to long-term psychiatric comorbidity.^{17–19} Hospital-based reports from tertiary centres indicate a steady rise in acute presentations for opioid poisoning, frequently complicated by respiratory depression, co-ingestion of benzodiazepines or alcohol, and soft-tissue infections related to unsafe injection practices.¹⁶ Although comprehensive national overdose surveillance is lacking, these case series suggest a growing burden of acute opioid-related morbidity.

Key clinical harms associated with non-medical opioid use in Nigeria, as reported in the included studies, are summarised in Table 2.

Opioid type	Reported clinical harms	Population/study setting	Key quantitative estimates (if available)
Tramadol (non-medical use)	Dependence; seizures; neuropsychiatric symptoms	Community and institution-based studies (primarily youth/urban populations; undergraduates)	No pooled estimate available
Pharmaceutical opioids (tramadol, codeine, morphine, pentazocine)	Acute opioid poisoning presentations; respiratory depression; co-ingestion with benzodiazepines/alcohol; soft-tissue infections linked to unsafe injection practices	Tertiary hospital presentations/case series	No pooled estimate available
Pentazocine (injectable)	Injection-related complications (chronic ulceration, abscess formation, necrotic skin changes, vascular injury); systemic complications (sepsis, infective endocarditis)	Clinical cohorts (notably sickle cell disease; chronic pain patients)	Pentazocine dependence is reported in up to 31% of sickle cell disease cohorts
Opioid misuse (various), often with polysubstance use	Psychiatric morbidity (anxiety, depression, sleep disturbance); less commonly, substance-induced psychosis and suicidal ideation	Cross-sectional studies of opioid misuse populations (adolescents/young adults; polysubstance users)	No pooled estimate available

Table 2. Clinical Harms of Non-medical Opioid Use in Nigeria

Injectable pentazocine use is associated with a particularly severe clinical profile. Among individuals with sickle cell disease, repeated self-injection has been linked to chronic ulceration, abscess formation, necrotic skin changes, and vascular injury, often necessitating surgical intervention.^{17,18} Systemic complications—including sepsis and infective endocarditis—have also been reported, underscoring the infectious disease risks associated with unsupervised opioid injection.

Mental health comorbidities are common across populations that misuse opioids. Cross-sectional studies consistently report elevated levels of anxiety, depression, and sleep disturbance, conditions that are frequently under-recognised and undertreated due to stigma and limited access to mental health services.^{15,16} Less commonly, substance-induced psychosis and suicidal ideation have been described, particularly among adolescents and young adults engaged in polysubstance use.¹⁵

Collectively, these findings highlight a multidimensional burden of harm that extends beyond overdose to include chronic disability, infectious complications, and significant psychiatric morbidity—placing additional strain on Nigeria’s already limited health-care infrastructure.

Treatment Modalities and Service Availability

Five studies described the availability and structure of opioid agonist therapy (OAT) services in Nigeria, focusing primarily on methadone and buprenorphine delivery within tertiary health facilities.^{3,20} As of 2023, OAT services were available in five accredited tertiary hospitals located in Lagos, Ibadan, and Abuja, operating under United Nations Office on Drugs and Crime (UNODC) standard operating procedures and Nigeria’s National Policy for Controlled Medicines.^{3,20} Table 3 summarises the accredited OAT programmes.

These programmes provide methadone or buprenorphine under strict narcotics regulations, with prescribing restricted to credentialed clinicians working within accredited centres. Extended-release buprenorphine formulations, although approved internationally, remain unavailable in Nigeria pending regulatory approval and import facilitation.³

Several additional OAT sites are in development in Port Harcourt and Enugu, but were not operational at the time of writing. Outside these limited programmes, access to evidence-based pharmacotherapy for opioid use disorder remains extremely constrained, particularly for populations residing outside major urban centres.

Table 3. Opioid Agonist Therapy Programmes in Nigeria

Location	Facility	Medications Offered	Year Established	Accreditation Body
Lagos	Lagos University Teaching Hospital (LUTH)	Methadone, Buprenorphine	2019	UNODC / NAFDAC
Lagos	Federal Neuropsychiatric Hospital, Yaba	Methadone	2020	UNODC / NAFDAC
Ibadan	University College Hospital (UCH)	Buprenorphine	2021	UNODC / NAFDAC
Abuja	National Hospital, Abuja	Methadone, Buprenorphine	2022	UNODC / NAFDAC
Abuja	Federal Neuropsychiatric Hospital, Kaduna (Abuja satellite service)	Methadone	2023	UNODC / NAFDAC

Notes:

- All programmes operate under Nigeria’s National Policy for Controlled Medicines and UNODC standard operating procedures.^{3,20}
- “Year Established” refers to the date each site received OAT accreditation and began patient enrolment.

- Additional sites are under development in Port Harcourt and Enugu (not yet operational at the time of writing).

Emerging Community Supports

Only three studies described community-level supports, including peer recovery networks, private rehabilitation centres, and informal sources of social support.^{6,7,21} Among these, one study documented the growing presence of mutual aid networks, particularly Narcotics Anonymous, which now holds weekly meetings in Lagos and Abuja.⁶ These groups provide structured, peer-led support grounded in the 12-step recovery model. They serve as an accessible and culturally adaptive option for individuals seeking to maintain abstinence and rebuild social connections outside of formal treatment settings. The Olive Prime in Abuja stands as Nigeria's first women-only inpatient programme offering medically supervised detoxification and transitional residential care⁷. Structured recovery housing models that combine stable, substance-free living with peer support are not yet established in Nigeria.²¹

Barriers to Access

Multiple studies identified structural, regulatory, and sociocultural barriers that limit access to evidence-based treatment for opioid use disorder in Nigeria.^{3,4,22} Current regulatory frameworks restrict opioid agonist therapy (OAT) provision to a small number of accredited tertiary facilities, effectively excluding large segments of the population—particularly those in rural and peri-urban settings—from timely care.

Workforce limitations further constrain service delivery. Formal training in addiction medicine is not routinely integrated into undergraduate or postgraduate medical curricula, resulting in a limited pool of clinicians qualified and willing to prescribe OAT. Even within accredited centres, shortages of trained staff and high patient-to-provider ratios impede treatment scale-up.^{3,20} Stigma remains a pervasive barrier at both community and institutional levels. Negative attitudes toward people who use opioids—among healthcare workers, families, and the wider public—reduce help-seeking, undermine treatment engagement, and discourage providers from participating in addiction care.^{4,22} Fear of legal repercussions and social labelling further compounds these challenges.

Together, these regulatory, workforce, and stigma-related barriers interact to produce a highly centralised and fragmented treatment landscape, setting the context for the policy and implementation considerations discussed in subsequent sections.

Research and Data Gaps

The current evidence on opioid use disorder in Nigeria is drawn primarily from cross-sectional surveys, facility-based audits, and small case series. Most of these studies were conducted in individual hospitals or cities and did not use sampling methods that reflect the broader population. As a result, important factors such as ethnic background, socioeconomic status, and differences between rural and urban communities are often overlooked. In many cases, sample sizes are relatively small, often in the low hundreds, which limits the ability to detect patterns across different subgroups or regions.

Geographic coverage remains uneven. A number of studies are concentrated in urban centres in the South-West, while large parts of the country, including the North-East and North-West, have received little or no research attention. This imbalance makes it difficult to form a national picture of opioid use trends or treatment needs.

There are currently no prospective studies that follow individuals over time, and Nigeria does not have a national registry to track treatment outcomes. Information on relapse, long-term retention in care, or mortality is therefore unavailable or anecdotal. Without this kind of longitudinal data, it is difficult to assess how well opioid agonist therapies work over time or how people respond to different treatment approaches.

Furthermore, the role of social and cultural influences has not been studied in depth. Stigma, gender expectations, family structures, and the use of traditional healing practices all shape how people experience addiction and whether they seek treatment. These factors are rarely measured or reported in published studies. Together, these gaps in data limit the evidence base that policymakers and healthcare providers need to design services that are both effective and culturally appropriate.^{9,16}

Discussion

Neurobiology of Addiction

Opioid use disorder is driven by maladaptive changes across interconnected brain systems regulating reward, stress, and executive control, resulting in compulsive drug use and high relapse risk. During the initial binge and intoxication phase, opioids strongly reinforce use by increasing dopamine release in the nucleus accumbens and enhancing endogenous opioid signaling.¹⁹ With repeated exposure, neuroadaptations emerge within stress circuits of the extended amygdala, characterized by heightened activity of corticotropin-releasing factor and dynorphin pathways, producing dysphoria, anxiety, and negative affect during withdrawal.¹⁹

As dependence progresses, dopamine signaling in reward pathways becomes blunted, contributing to anhedonia and reduced responsiveness to natural rewards. In the preoccupation and anticipation phase, impaired top-down regulation from the prefrontal cortex and insula, combined with intensified glutamatergic drive to the nucleus accumbens, amplifies cue-induced craving and compulsive drug-seeking behaviour.¹⁹ Together, these enduring neurobiological changes underpin the chronic, relapsing nature of opioid use disorder and explain the persistence of relapse risk even after periods of abstinence.

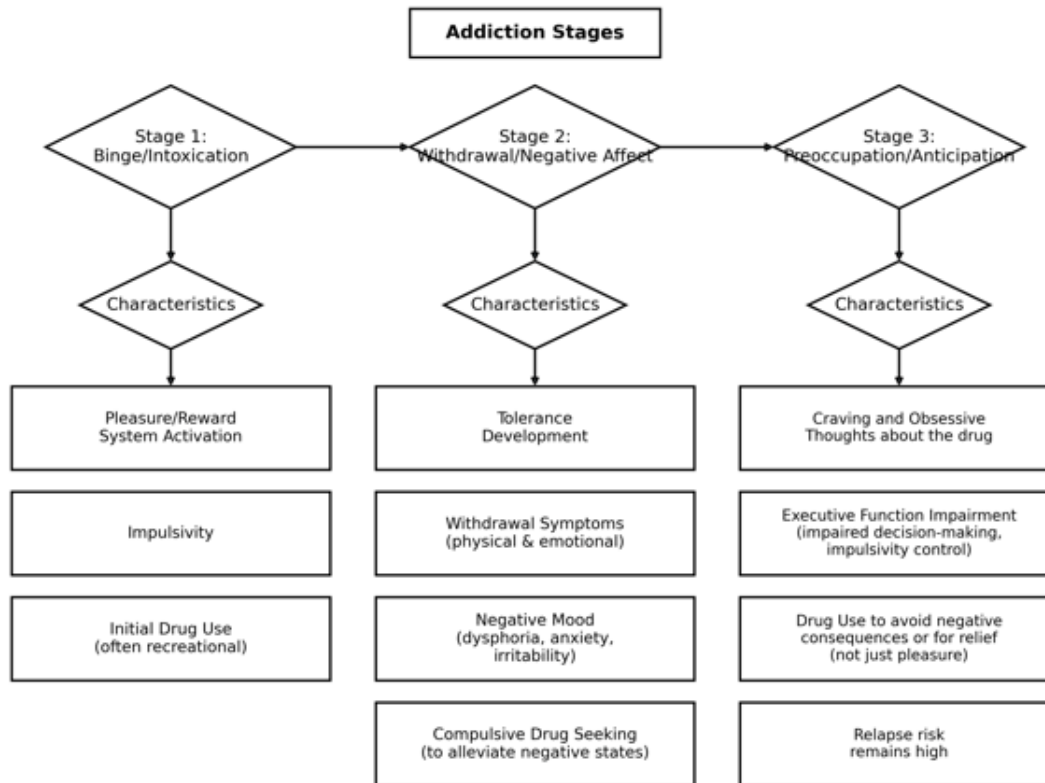


Figure 2. Neurocircuitry Model of Opioid Addiction

This flowchart illustrates the three interlinked stages that drive opioid use disorder. In the binge/intoxication phase, repeated opioid exposure hijacks the brain's reward circuitry—marked by surges of dopamine and enhanced opioid-peptide signaling—reinforcing drug use. The withdrawal/negative-affect stage follows, characterized by activation of stress systems (corticotropin-releasing factor, dynorphin) in the amygdala and blunted dopamine transmission in the nucleus accumbens, producing dysphoria and anhedonia. Finally, in the preoccupation/anticipation phase, impaired top-down control from the prefrontal cortex and insula and intensified glutamatergic drive fuel intense craving and compulsive drug-seeking, thereby perpetuating the cycle and maintaining high relapse risk.

Therapeutic Neuroadaptations of Opioid Agonist Therapy

Opioid agonist therapies work by directly reversing the neurobiological changes that drive addictive behaviour. Methadone provides a stable activation of μ receptors, restoring dopamine tone in the nucleus accumbens and dampening overactive stress pathways mediated by corticotropin-releasing factor and dynorphin in the amygdala.^{19,23} Buprenorphine's high-affinity partial agonism at μ receptors and antagonism at κ receptors further normalizes reward signaling and mitigates stress-induced dysphoria.^{19,24} Clinically, these effects translate into relief from withdrawal, reduction of negative affect, and attenuation of craving—key factors that support retention in treatment and reduce relapse risk.^{23,24}

Psychosocial and Community Support Models

Psychological therapies and community-based programmes complement pharmacotherapy by addressing the behavioural and social dimensions of recovery. Cognitive-behavioural therapy helps patients develop coping strategies for triggers and cravings.²⁵ Peer-support groups, such as Narcotics Anonymous, offer ongoing mutual encouragement and relapse prevention skills.⁶ Residential recovery homes provide

structured, substance-free environments that reinforce new routines and social reintegration.⁸ Together, these psychosocial interventions extend the benefits of OAT into daily life, improving long-term outcomes by strengthening motivation, rebuilding social networks, and promoting sustained abstinence.^{8,25}

Methadone

Methadone is a long-acting, full μ -opioid receptor agonist used in opioid agonist therapy to suppress withdrawal, reduce craving, and stabilise neurobiological dysregulation associated with opioid use disorder.^{23,24} Its long and variable half-life supports once-daily dosing but necessitates cautious induction and titration to minimise the risk of sedation and overdose. In Nigeria, methadone initiation typically begins at low doses (10–30 mg once daily) under direct clinical supervision, with gradual titration based on withdrawal control and craving suppression. Maintenance doses commonly range from 60–120 mg/day. Close monitoring during induction is essential, particularly for respiratory depression and QT interval prolongation.

Under Nigeria's National Policy for Controlled Medicines and UNODC standard operating procedures, methadone is classified as a controlled narcotic. Prescribing is restricted to credentialed medical practitioners working within accredited opioid treatment programmes, with importation, storage, and dispensing regulated by NAFDAC.^{3,20} These regulatory safeguards ensure clinical oversight but also contribute to limited geographic access.

Buprenorphine

Buprenorphine is a high-affinity partial μ -opioid receptor agonist and κ -opioid receptor antagonist that reduces withdrawal symptoms and craving while conferring a lower risk of respiratory depression compared with full agonists.^{19,24} Its pharmacological profile makes it particularly well suited for maintenance therapy, especially in settings where safety concerns, overdose risk, and limited clinical monitoring capacity constrain methadone scale-up.

A key clinical advantage of buprenorphine lies in its role in transitioning patients from full μ -agonists. When initiated appropriately, buprenorphine can stabilise patients previously maintained on heroin, tramadol, pentazocine, or methadone by partially activating μ -receptors while simultaneously displacing higher-efficacy agonists. This pharmacodynamic property reduces reinforcement and overdose risk but necessitates careful induction to avoid precipitated withdrawal.²⁶ Evidence indicates that structured transition protocols—timed initiation during moderate withdrawal, conservative initial dosing, and close clinical supervision—can facilitate successful conversion from full agonists to buprenorphine with good tolerability and retention outcomes.²⁶

Treatment initiation, therefore, requires that patients be in moderate opioid withdrawal prior to dosing. Induction typically begins with 2–4 mg sublingually, with cautious dose escalation over the first day to achieve symptom relief and craving control. Maintenance doses generally range from 8–24 mg once daily, depending on opioid tolerance, ongoing exposure risk, and clinical response.

Buprenorphine exhibits complex and variable pharmacokinetics, including high receptor affinity, extensive first-pass metabolism, and a long terminal half-life, features that support once-daily dosing but also necessitate careful induction and dose adjustment in clinical practice.²⁷ Clinical pharmacokinetic studies in opioid-dependent populations further demonstrate substantial interindividual variability in buprenorphine absorption, metabolism, and exposure, reinforcing the need for individualized dosing and close clinical monitoring during induction and maintenance.²⁸

In Nigeria, buprenorphine is regulated as a controlled medicine and may only be prescribed within accredited opioid treatment programmes by credentialed clinicians, in accordance with United Nations

Office on Drugs and Crime guidelines and the National Policy for Controlled Medicines.^{3,20} Although extended-release injectable buprenorphine formulations have demonstrated effectiveness internationally—particularly for patients with adherence challenges or unstable living conditions²⁹—they remain unavailable in Nigeria pending regulatory approval and supply-chain facilitation.³

Naltrexone

Naltrexone is a competitive opioid receptor antagonist available as a daily oral formulation or as a monthly extended-release intramuscular injection.^{30,31} Unlike opioid agonist therapies, it has no abuse potential and does not produce physiological dependence.

Extended-release injectable naltrexone has demonstrated efficacy in relapse prevention among detoxified and highly motivated individuals, with outcomes comparable to buprenorphine in selected populations.^{30,31} However, initiation requires complete opioid abstinence for at least 7–10 days, limiting feasibility in settings with constrained access to supervised detoxification and follow-up care.

Under Nigeria's National Policy for Controlled Medicines, naltrexone is not classified as a scheduled narcotic and may be prescribed by licensed physicians without the accreditation requirements applied to methadone and buprenorphine.²⁰ While this regulatory flexibility could facilitate broader access, practical implementation remains challenged by detoxification capacity, adherence support, and continuity of care.

Recovery Peer Groups and Residential Homes

Mutual aid networks such as Narcotics Anonymous meet weekly in Lagos and Abuja, offering psychosocial support and relapse prevention.⁶ Private residential programmes—exemplified by The Olive Prime in Abuja—provide medically supervised detoxification and transitional care.⁷ Structured recovery housing models that offer stable, substance-free environments with peer support are lacking in Nigeria,²¹ representing a critical gap given their proven benefit elsewhere.

Motivational Factors Underlying Opioid Use

In Nigeria, opioids (notably tramadol and codeine) are often used to self-medicate work-related fatigue, manage untreated pain, and alleviate psychosocial stress. Pleasure seeking and peer influence further drive non-medical use among young adults,^{2,16} underscoring the need for targeted prevention and early intervention.

Regulatory Environment and Service Expansion

Since the introduction of Nigeria's 2017 National Policy for Controlled Medicines, methadone and buprenorphine have been regulated under stringent narcotics legislation that confines opioid agonist therapy to a handful of accredited tertiary hospitals.^{3,20} Under the Poison and Pharmacy Act, Dangerous Drugs Act and NAFDAC regulations, only medical doctors and dentists registered with the Medical and Dental Council of Nigeria and credentialed through UNODC-approved programmes may initiate and oversee opioid agonist treatment.^{20,32} Nurses are permitted to prescribe a limited formulary of non-controlled medications in primary-care settings, while pharmacists may dispense but not prescribe any controlled opioids. Although this framework ensures specialist oversight, it also creates significant bottlenecks in regions with few physicians, slowing programme scale-up and limiting patient access.

Experiences from other low-resource African settings provide useful context for Nigeria's challenges. In Tanzania and Kenya, phased scale-up of methadone programmes integrated within HIV treatment services has expanded access while maintaining safety through task-sharing, structured supervision, and centralised monitoring. These models demonstrate that decentralised opioid agonist therapy can be implemented in resource-constrained health systems when supported by regulatory reform, workforce training, and strong linkage to public-health infrastructure.^{3,9,33}

Allowing registered primary care physicians to prescribe opioid agonist therapy would transform access to treatment in Nigeria by extending services beyond tertiary centres into community clinics and rural health posts. Achieving this goal may require the creation of a formal certification in addiction medicine developed and administered jointly by the Medical and Dental Council of Nigeria (MDCN), the National Postgraduate Medical College of Nigeria (NPMCN), the West African College of Physicians (WACP), and the United Nations Office on Drugs and Crime (UNODC). That certification programme should cover core competencies in opioid pharmacology, patient assessment and monitoring, management of coexisting medical and psychiatric conditions, strategies to prevent medication diversion and ethical considerations in addiction care. Embedding the curriculum within existing postgraduate training pathways and offering continuing professional development through workshops and supervised clinical placements will ensure that primary care doctors gain the knowledge and confidence needed to prescribe safely. In addition, a system of ongoing mentorship, peer review and performance audits—supported by a centralized registry of OAT outcomes—will maintain high standards of care as the workforce expands. Such a programme would ensure that primary care doctors acquire in-depth knowledge of opioid agonist pharmacology,

comprehensive patient assessment, management of coexisting medical and psychiatric conditions and best practices for preventing medication diversion. Embedding this certification within existing postgraduate training and providing ongoing mentorship and quality assurance would facilitate safe decentralisation of treatment and support sustainable scale-up in underserved regions.

Also, a structured mentorship system, pairing newly credentialed prescribers with experienced specialists via telemedicine or regular case conferences, would provide ongoing clinical supervision and support safe prescribing practices.³² Implementing routine quality audits through centralized treatment registries can monitor adherence to protocols, track patient outcomes and identify areas for improvement.³³ By decentralizing OAT into primary-care settings, patients in rural and underserved regions would benefit from reduced travel burdens, lower stigma and improved continuity of care, ultimately enhancing treatment retention and long-term recovery prospects.⁹ In parallel, establishing regional training hubs, integrating addiction modules into undergraduate medical education and launching targeted public education campaigns to reduce stigma will be essential to broaden service coverage and improve retention in treatment.

Community-Based Support Models

Formal OAT services remain centralised, but nascent peer support and residential programmes fill some gaps.^{6,7} The absence of structured recovery housing means many patients transition directly from acute care to unsupervised environments, increasing relapse risk.²¹

Research and Surveillance Gaps

Most studies employ small, cross-sectional samples, limiting insights into long-term outcomes and sociocultural drivers of opioid use. There is no national surveillance system for OUD, and implementation research on community-delivered OAT and peer support remains scant.^{20,33}

Policy and Implementation Considerations for Nigeria

Scaling up effective treatment for opioid use disorder in Nigeria will require coordinated reforms across regulatory, workforce, service delivery, and community domains. Current narcotics regulations restrict opioid agonist therapy (OAT) provision to a small number of accredited tertiary facilities, creating significant geographic and structural barriers to access. While this framework ensures specialist oversight, it also limits scalability in regions with few physicians and high unmet need.

A phased approach to decentralisation could improve access while maintaining safety. Pilot programmes that integrate methadone and buprenorphine dispensing into selected primary care centres—supported by clear referral pathways to tertiary hubs—would allow evaluation of feasibility, safety, and patient outcomes before national scale-up. Regulatory engagement with the National Agency for Food and Drug Administration and Control (NAFDAC) could also facilitate registration and importation of extended-release formulations, alongside strengthened pharmacovigilance systems.

Workforce development is central to sustainable expansion. Establishing a formal certification pathway in addiction medicine—jointly supported by the Medical and Dental Council of Nigeria, the National Postgraduate Medical College of Nigeria, the West African College of Physicians, and the United Nations Office on Drugs and Crime—would standardise competencies in opioid pharmacotherapy, patient monitoring, management of comorbidities, and diversion prevention. Embedding addiction medicine

training within undergraduate and postgraduate curricula, supplemented by continuing professional development, would broaden the pool of qualified prescribers.

To support safe decentralisation, structured mentorship models pairing newly credentialed clinicians with experienced specialists—via telemedicine, case conferences, or regional supervision hubs—could provide ongoing clinical oversight. Routine quality audits and centralised treatment registries would further enable monitoring of adherence to protocols, patient retention, and clinical outcomes.

Community-based supports must evolve in parallel with formal treatment services. Expanding peer-led recovery networks, developing structured recovery housing, and strengthening linkages between health services and social support systems are essential to reduce relapse risk and promote long-term recovery. Public education campaigns addressing stigma and misconceptions about opioid use disorder can further improve help-seeking and treatment engagement.

Together, these coordinated policy actions—implemented incrementally and evaluated rigorously—offer a pragmatic pathway to expand access to evidence-based opioid addiction care in Nigeria while respecting local resource constraints and sociocultural contexts.

Limitations

This narrative review has several limitations. Although a structured quality appraisal was undertaken using established tools appropriate to study design, the heterogeneity of included evidence and reliance on predominantly cross-sectional studies precluded quantitative synthesis or meta-analysis. Many included studies were facility-based or geographically limited, restricting generalisability across Nigeria's diverse regions and populations.

Despite independent verification of study eligibility and extracted data by a second reviewer, selection bias cannot be fully excluded. Restriction to English-language publications may have resulted in omission of relevant regional or unpublished reports, and publication bias remains possible despite inclusion of grey literature and government sources.

Finally, the absence of longitudinal studies and national surveillance systems limits insights into treatment outcomes, relapse, and mortality over time. These constraints highlight the need for prospective cohort studies and implementation research to strengthen the evidence base for opioid use disorder interventions in Nigeria.

A protocol was not prospectively registered because this review was designed as a narrative synthesis to integrate heterogeneous epidemiological, clinical, and policy-oriented evidence rather than to answer a narrowly defined question amenable to systematic review. Future reviews addressing more focused questions will consider prospective registration in platforms such as PROSPERO or the Open Science Framework.

Recommendations and Conclusion

Meaningful expansion of opioid addiction services in Nigeria will require coordinated reforms across regulatory, educational, clinical, and community domains. Simplifying the accreditation process for opioid treatment programmes and decentralising access to methadone and buprenorphine, including extended-

release formulations, would enable OAT to reach beyond a few tertiary centres.³ Parallel efforts to integrate addiction medicine into undergraduate and postgraduate curricula, and to provide continuing professional development guided by World Health Organization training modules,¹ can equip healthcare providers with the skills and confidence needed to manage OUD effectively. Embedding OAT within primary health care pilot clinics and pharmacy-based dispensing models, approaches that have shown success in comparable low-resource settings, could be adapted to Nigeria's diverse care environments.³³

Establishing a national surveillance system that mandates routine reporting of opioid use patterns, treatment uptake, and patient outcomes is essential to guide and evaluate these reforms.²⁰ community-level supports should be strengthened by developing structured recovery housing and expanding peer networks such as Narcotics Anonymous, which have demonstrated value in sustaining long-term abstinence.^{6,21} Generating high-quality local evidence through longitudinal cohort studies, implementation research on community-delivered OAT models, and qualitative work on patient and provider experiences will further refine policy and practice.³³

In conclusion, bridging Nigeria's clinical gaps in opioid addiction medicine demands a multifaceted strategy that aligns regulatory reform, workforce development, service decentralisation, robust surveillance, and recovery-oriented community supports. By prioritising these interlinked actions and fostering rigorous outcome research, Nigeria can move toward a more accessible, effective, and sustainable response to its silent opioid epidemic.

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Conflicts of Interest

The author declares no conflicts of interest.

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Ethical Approval

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Data Availability

All data underlying this review are contained in the cited references.

Author Contributions

The author conceived the study, conducted the literature search and data extraction, drafted the manuscript, and approved the final version for submission.

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