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ASSESSING INSTITUTIONAL PERFORMANCE AND INTER-AGENCY COORDINATION IN SUBSTANCE USE DISORDER PREVENTION IN NIGERIA

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ABSTRACT

This study assessed institutional performance and inter-agency coordination in Substance Use Disorder (SUD) prevention in Nigeria. The aim was to evaluate the performance and coordination of institutions responsible for SUD prevention and to determine whether coordination significantly influences institutional performance. A cross-sectional survey design was employed. A sample of 400 participants was chosen from legal experts, law enforcement agencies including the National Drug Law Enforcement Agency (NDLEA) and the Nigeria Police Force, Non-Governmental Organizations (NGOs), Civil Society Organizations (CSOs), and People Who Use Drugs (PWUD). The respondents were drawn from four states – Bayelsa, Lagos, Kaduna, and Enugu, representing four geopolitical zones in Nigeria. The data were analyzed using frequencies and percentages, cross-tabulations, ANOVA, and Kruskal–Wallis tests to explore inter-agency differences. An ordered logistic regression model was utilized to evaluate the impact of coordination on performance, incorporating cluster-robust standard errors. Additionally, a multilevel ordered logistic regression was performed as a robustness check to address the nesting of data within agencies. Findings showed that institutional performance in SUD prevention was generally rated as moderate to good, with law enforcement agencies and NGOs viewed as performing significantly better than other stakeholder groups. Coordination was also found to be rated as moderate (fair to good) but varied significantly across different agencies, with perceptions being less favourable among people who use drugs. The findings as well showed that higher levels of coordination significantly increased the likelihood of improved institutional performance, even after controlling for capacity, funding, and agency type. The study concluded that strengthening inter-agency coordination is critical to improving SUD prevention outcomes in Nigeria. Policy efforts should prioritize institutionalized coordination platforms and capacity enhancement to improve efficiency, reduce duplication, and maximize public health impact.

KEYWORDS: *Substance Use Disorder; Prevention; Institutional Performance; Inter-Agency Coordination*
JEL Classification: I12, I18, H11, D73

1.INTRODUCTION

Institutions focused on preventing Substance Use Disorders (SUD) mainly aim to cut down on drug use while also tackling the use of other psychoactive substances. The term "substance use" covers a wide range of psychoactive substances, regardless of whether they are legal or regulated, and includes patterns of risky or harmful consumption. This concept goes beyond just illegal drugs; it also includes tobacco, alcohol, inhalants, and new psychoactive substances often dubbed "legal highs" or "smart drugs." According to the United Nations and the World Health Organization (2018), the main goal of SUD prevention is to help individuals, especially young people, avoid or delay starting to use psychoactive substances. For those who have already started, prevention efforts focus on lowering the chances of developing substance use disorders, including harmful use and dependence. On a broader scale, substance use prevention aims to encourage the healthy and safe growth of children and adolescents, helping them unlock their potential and become valuable members of their communities and society as a whole. Effective prevention strategies promote positive interactions among children, youth, and adults within their families, schools, workplaces, and communities, ultimately enhancing social cohesion and overall well-being (United Nations and the World Health Organization, 2018).

Substance Use Disorder (SUD) is a complicated and multidimensional condition that impacts not just individuals, but also families and entire communities around the globe. It is a major public health concern that no nation can ignore. The World Health Organization (WHO) reported that in 2019, about 270 million people were using psychoactive substances, with around 35 million of them struggling with SUD. The effects of SUD are far-reaching, making up roughly 11.8% of the global disease burden and leading to about 3.3 million deaths each year (WHO, 2019). Additionally, the United Nations Office on Drugs and Crime (UNODC) noted that in 2020, around 120 million people were living with SUD worldwide.

Africa is shouldering a heavy burden when on substance use disorders (SUD). Even though the continent makes up about 14% of the world's population, it surprisingly accounts for around 25% of the global SUD burden (WHO, 2019) and nearly 40% of those

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living with SUD worldwide (UNODC, 2020). In Nigeria, this issue is particularly pressing. It is estimated that 14.3% of people aged 15 to 64 have tried psychoactive substances, with 4.7% of that group grappled with SUD. The National Drug Law Enforcement Agency (NDLEA, 2019) reported that the most frequently used substances include cannabis, opioids, and amphetamines. The situation in Nigeria is even more challenging by structural issues like poverty, unemployment, limited access to education and healthcare, and cultural norms that may inadvertently promote substance use. Efforts to prevent and treat SUD face a complex challenge, stemming from a tangled relationship between prevention laws, institutional frameworks, and the necessary capacity to implement effective policies.

Nigeria is grappling with a growing and intricate challenge related to substance use, which is putting a strain on its public health, security, and social systems. Even though there are several institutions in place, like the National Drug Law Enforcement Agency (NDLEA) and the Federal Ministry of Health, there are still worries about overlapping responsibilities, poor coordination, gaps in policy implementation, and limited institutional capacity. Without a thorough evaluation, it is difficult to determine if the current laws, strategies, and collaborative efforts are effectively achieving prevention objectives. Thus, this study is conducted to evaluate the performance and coordination of institutions responsible for SUD prevention in Nigeria. By conducting this research, the researchers aim to gather empirical evidence on the strengths and weaknesses of these institutions, pinpoint coordination issues, and come up with policy recommendations that can boost efficiency, accountability, and overall effectiveness in the fight against SUD across the nation.

2.LITERATURE REVIEW

2.1 Conceptual Literature

2.1.1 Institutional Performance

Scholars often approach the concept of institutional performance from different perspectives based on their specific interests. The Fiveable Content Team (2025) viewed institutional performance as the effectiveness and efficiency with which an institution fulfills its intended roles and meets its goals. This definition emphasizes the importance of achieving objectives and making the best use of resources. Some other researchers, including Al-Dhamari, Al-Sanbani, & Aldilami (2025) highlighted performance as an organization's ability to effectively utilize its resources to satisfy its goals and the expectations of stakeholders, focusing on both internal strengths and external demands. Another viewpoint describes institutional performance as the strategic and organized efforts to close the gap between current and desired outcomes by effectively using human and material resources (Al-Makhadhi & Al-Mashriqy, 2022). This perspective explicitly considers organizational processes and the need for improvement. On the other hand, a sociological approach views institutional performance as a socially constructed set of legitimate achievements that align with normative expectations within institutional fields, rather than just focusing on measurable results (Modell, 2019). Some definitions even go beyond efficiency and effectiveness to include responsiveness and accountability to citizens and stakeholders (Fiveable Content Team, 2025), highlighting the quality of governance. Performance can also be defined in terms of achieving strategic goals across various areas, such as operations, human resources, and customer service outcomes (Achieng, Kibirango, & Aunga, 2025). While these definitions differ in their focus, they all share the common idea that institutional performance is about reaching core objectives in relation to available resources and context, even as they vary in how much they emphasize normative legitimacy, stakeholder responsiveness, or purely quantifiable results.

2.1.1 Inter-Agency Coordination

Inter-agency coordination is about how different organizations align their efforts, share vital information, and manage their interdependencies to reach common goals that no single agency could tackle on its own. For example, Ahsan (2023) described the concept as the synchronization of activities among various agencies working towards a shared objective, focusing on how to manage the interdependence of their actions to prevent fragmentation and inefficiency. Building on this idea, Roberts & Milman (2024) looked at it from a public management perspective, seeing it as collective action driven by mandates that require agencies to collaborate. This highlights how structural arrangements and organizational choices can shape coordinated outcomes and the importance of aligning organizational forms for effective teamwork. Syarien & Samarah (2023) pointed out that inter-agency coordination is crucial for the successful implementation of policies or programs. They note that it is conceptually complex yet essential for breaking down siloed operations among government bodies. Zain, Zahari, & Zainol (2023) are of the view that effective coordination involves sharing information and making decisions that are critical for quick and coherent responses, especially during disasters, emphasizing its operational side. The concept is also viewed Akale & Owan (2023), in terms of collaboration and resource optimization among government, non-government, and civil society stakeholders. This view reflects a broader governance perspective where joint decision-making and accountability are key to coordinated efforts.

2.1.3 Substance Use Disorder

Chirimwami & Van Ryzin (2024) defined prevention as programs that equip adolescents with knowledge, skills, and the ability to refuse substances, helping to delay or reduce the initiation of substance use. Aleer et al. (2024) viewed SUD prevention in terms of protective factors and strategies that can lower both the prevalence and severity of substance use, pointing out that awareness, access, and participation in programs are crucial elements. From a behavioral health standpoint, Manuel et al. (2025) framed prevention as strategic communication and messaging that shape knowledge, attitudes, and norms surrounding substance use, underscoring the

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significance of effective messaging in driving behavior change. Latimore et al. (2023) viewed SUD prevention as a way to reduce risk factors and enhance protective factors within individual, family, school, and community settings to prevent the onset or escalation of use. Fishbein & Sloboda (2024) considered prevention as part of evidence-based programming that promotes healthy outcomes and resilience in youth, addressing the environmental and social factors that influence substance use. While these definitions vary in focus from communication and education to environmental and policy approaches, they all share a common goal: proactively reducing the risk of substance use and delaying or preventing the progression to disorder.

Institutional performance and inter-agency coordination in SUD prevention is about teamwork to collaborate effectively to achieve their prevention targets. It is not just about how well each organization operates on its own; it is also crucial that they can coordinate their efforts, share resources, and align their strategies. If coordination is lacking, even the best policies can fail. However, strong inter-agency collaboration can boosts the overall ability of institutions to deliver effective prevention results.

2.2 Empirical Literature

Ojonuba et al. (2023) conducted an evaluation of an educational empowerment intervention designed to decrease substance use among adolescents in inner-city Abuja, Nigeria, employing a randomized controlled trial methodology. The study utilized a randomized controlled trial framework with both intervention and control groups, revealing significant decreases in attitudes and behaviours related to substance use. Also, Conrod et al. (2025) carried out a five-year cluster randomized trial involving 31 high schools in both Canada and the United States to assess a personality-targeted program aimed at preventing substance use. Through the application of multilevel Bayesian analysis, the research revealed that students participating in the intervention group experienced a 3reduction in the annual rise of substance use disorder rates when compared to the control group, indicating a significant long-run preventive impact. Williams et al. (2025) also evaluated a hybrid substance use prevention initiative that integrated online and classroom elements across 19 high schools, involving 1,235 students. Through randomized assignment, the research demonstrated significant decreases in cigarette smoking, alcohol consumption, and intentions to engage in substance use, as well as enhancements in refusal and social skills. Kolawole et al. (2025) performed a descriptive cross-sectional study involving 800 secondary school students in Lagos. Despite a high level of awareness regarding the effects of substances, the current prevalence of substance use was found to be 6.9%, with alcohol and tramadol being the most commonly used substances, highlighting the discrepancies between knowledge and the effectiveness of prevention measures. Enebe et al. (2025) conducted an assessment of 163 inmates within a correctional facility to evaluate the prevalence and patterns of substance use disorders as well as psychiatric morbidity through structured interviews. The findings indicated that high rates of lifetime substance use and psychological distress imply a relationship between substance use disorders and extensive mental health challenges in institutional environments.

Adejoh et al. (2024) employed qualitative methodologies to explore the experiences of individuals with SUD during the COVID-19 lockdown in Lagos. While the study did not utilize quantitative measures, it offered valuable insights into the rise in drug consumption and coping strategies in the context of pandemic restrictions, emphasizing the contextual elements that affect SUD trends. Agwogie & Kliewer (2024) examined investigated the parenting and protective factors linked to polysubstance use using a sample of 1,607 from public school students in Lagos. The use of structural equation modeling indicated that positive parenting relationships and support from schools had significant protective effects in decreasing the likelihood of polysubstance use. Idowu et al. (2023) conducted a cross-sectional survey involving 420 young individuals in rural Osun State. The substances most frequently abused were alcohol, shisha, and tramadol. Factors influencing behavior were found to include age, gender, and attitudes towards substance use, indicating a significant prevalence and important demographic predictors of substance abuse. Omokhagbo et al. (2024) conducted a systematic review and meta-analysis encompassing 22 studies with more than 43,000 participants to assess the pooled prevalence of alcohol, tramadol, and cannabis consumption in West Africa. The elevated pooled prevalence rates indicated prevalent regional risk factors and underscore the necessity for focused prevention strategies.

While many studies in Nigeria have concentrated on the prevalence, risk factors, and treatment outcomes of SUD, there is little focus on evaluating the performance and coordination of institutions responsible for SUD prevention in Nigeria. In particular, there is empirical evidence on how effectively institutions are making prevention policies into action, distributing resources, and collaborating across different sectors. This gap constraint understanding if institutional shortcomings or coordination issues are hindering prevention efforts. It highlights the urgent need for a thorough evaluation of how these institutions are functioning and how well they coordinate with each other in the fight against SUD in Nigeria.

3.METHODOLOGY

3.1 Research Design

This study used a cross-sectional survey research design to assess how well institutions in Nigeria are performing and coordinating their efforts to prevent Substance Use Disorder (SUD). A cross-sectional approach was chosen because it allows for gathering data from various stakeholder groups at a single point in time, making it possible to evaluate perceptions, institutional practices, and coordination methods across different agencies and regions simultaneously. This design captures insights from multiple stakeholders, which enhances the credibility of the findings by including both institutional representatives (like the National Drug

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Law Enforcement Agency and the Nigeria Police Force) and those who benefit from the services (People Who Use Drugs). By doing this, the evaluation becomes more robust, reflecting both internal and external views on how effective these institutions are.

3.2 Population of the Study

The study's population consisted of key players who are either involved in or impacted by efforts to prevent substance use disorders (SUD) in Nigeria. This group included legal experts focused on drug policy and enforcement, law enforcement officials from the National Drug Law Enforcement Agency (NDLEA) and the Nigeria Police Force, as well as representatives from Non-Governmental Organizations (NGOs) and Civil Society Organizations (CSOs) dedicated to preventing substance misuse. Additionally, it encompassed People Who Use Drugs (PWUD), which included youths, adults, and students. The research specifically targeted four states that represent different geopolitical zones in Nigeria: Bayelsa State (South-South), Lagos State (South-West), Kaduna State (North-Central), and Enugu State (South-East). These states were chosen to showcase the regional diversity in institutional frameworks, levels of urbanization, and the various challenges related to substance use. By including multiple geopolitical zones, the study aims to enhance the external validity and generalizability of its findings within the Nigerian context.

3.3 Sample Size Determination and Sampling Techniques

For this study, a sample of 400 respondents were used, which was deemed sufficient for conducting statistical analysis, especially when comparing different subgroups across various institutions and states. With these 400 observations, the study can confidently identify significant relationships between the key variables while also accounting for control variables and making necessary adjustments for clustering.

The research utilized a multistage sampling approach. In the first stage, the researchers employed purposive sampling to choose four states – Bayelsa, Lagos, Kaduna, and Enugu, based on their geopolitical significance and their involvement in substance use disorder (SUD) prevention efforts. In the second stage, the researchers applied stratified sampling to ensure that we included a diverse range of key stakeholder groups: legal experts, law enforcement agencies, NGOs/CSOs, and people who use drugs (PWUD). This method guaranteed that each relevant institutional and beneficiary category was adequately represented in the sample. Then, within each stratum, the researchers selected respondents using both purposive and convenience sampling techniques, particularly focusing on hard-to-reach populations like PWUD. For institutional representatives, we chose respondents based on their direct engagement in SUD prevention activities to ensure that we received informed insights regarding institutional performance and coordination.

3.4 Data Collection Instrument

Data for this study were gathered through a structured questionnaire aimed at collecting quantitative insights into how institutions perform and coordinate their efforts in preventing Substance Use Disorders (SUD) in Nigeria. The questionnaire was crafted to align with the study's goals and the relevant literature surrounding institutional performance, inter-agency collaboration, and public health governance. It mainly featured closed-ended questions to make statistical analysis easier. Key aspects like institutional performance and coordination levels were evaluated using five-point Likert-type scales, ranging from 1 (“Very Poor”) to 5 (“Excellent”). The performance measure focused on how respondents rated their institution's execution of SUD prevention activities over the last year, while the coordination measure looked at how well they perceived their organization worked with other agencies involved in SUD prevention. To ensure the questionnaire was valid, experts in public health, criminology, and drug policy reviewed it. A pilot test was carried out with a small group of respondents similar to the target population to check for clarity, reliability, and internal consistency of the questions. Revisions were made based on the feedback received before moving on to full-scale data collection. For items measuring similar constructs, reliability was evaluated using Cronbach’s alpha to confirm internal consistency.

3.5 Method of Data Analysis

Data were analyzed using both descriptive and inferential statistical techniques, all aimed at evaluating how well institutions in Nigeria are performing and coordinating their efforts to SUD. The analysis unfolded in three stages.

First, the researchers used descriptive statistics to summarize the key variables. The researchers calculated frequencies and percentages to assess institutional performance and coordination levels, which were rated on a five-point Likert scale from 1 (“Very Poor”) to 5 (“Excellent”). The researchers also conducted cross-tabulations across different agency categories to explore distribution patterns and gain initial insights into how various stakeholder groups like officials from the National Drug Law Enforcement Agency, the Nigeria Police Force, NGOs/CSOs, legal experts, and PWUD perceive performance and coordination.

In the second step, the researchers ran some inferential statistical tests to see if there were any significant differences among the agencies. Since the dependent variables were ordinal, the researchers used both parametric and non-parametric tests to ensure robustness. The researchers applied Analysis of Variance (ANOVA) to check for mean differences in performance and coordination across different agency types, and the researchers also used the Kruskal–Wallis rank test, which is a non-parametric option that

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works well with ordinal data. By using both tests, the reliability of the findings is bolstered, making sure the conclusions were not overly influenced by distributional assumptions.

Next, to see if coordination has a significant impact on institutional performance in SUD prevention, the researchers estimated an ordered logistic regression model. This model is a good fit because the dependent variable, performance or the implementation of SUD prevention activities, is measured on a five-point ordered scale. The main independent variable is coordination, measured as the level of inter-agency collaboration in SUD prevention, also rated from 1 ("Very Poor") to 5 ("Excellent").

The model additionally controlled for significant institutional characteristics that could independently affect performance. These characteristics comprised: (i) Capacity, measured by the adequacy of the institution's human resources dedicated to SUD prevention initiatives; (ii) Funding, measured by the yearly budget assigned to SUD prevention efforts; and (iii) Agency Type, classified into categories such as legal professionals; law enforcement agencies (including the National Drug Law Enforcement Agency and the Nigeria Police Force); NGOs/CSOs involved in SUD prevention; and PWUD. The inclusion of these controls is essential for isolating the independent impact of coordination on institutional performance.

To address potential intra-agency correlation among respondents from the same institutions, cluster-robust standard errors were estimated at the agency level. This modification rectifies the potential non-independence of observations within agencies, yielding more reliable standard errors and enhancing statistical inference.

Furthermore, a multilevel ordered logistic regression model was employed as a means of conducting a robustness check. This methodology is supported by the hierarchical nature of the data, where individuals are organized within agencies. The multilevel model facilitates random intercepts at the agency level, thus accounting for unobserved heterogeneity among institutions and yielding more precise parameter estimates. The alignment of results between the single-level ordered logit model with clustered standard errors and the multilevel model bolsters the credibility and robustness of the findings.

Let Y_i^* represent the unobserved (latent) level of institutional performance for respondent i. The latent model is specified as:

$$Y_i^* = \beta_0 + \beta_1 \text{Coordination}_i + \beta_2 Capacity_i + \beta_3 Funding_i + \beta_4 Agency_i + \epsilon_1 \quad 1$$

Where Y_i^* is latent institutional performance, Coordination_i represents level of coordination among SUD prevention institutions, $Capacity_i$ is institutional capacity (human resource adequacy), $Funding_i$ is funding allocated to SUD prevention, and $Agency_i$ is a vector of agency type dummies. ϵ_1 is the error term assumed to follow a logistic distribution.

The observed ordinal outcome Y_i relates to the latent variable Y_i^* through threshold parameters μ_j such that:

$$Y_i = \begin{cases} 1 & if\ Y_i^* \le \mu_1 \\ 2 & if\ \mu_1 < Y_i^* \le \mu_2 \\ 3 & if\ \mu_2 < Y_i^* \le \mu_3 \\ 4 & if\ \mu_3 < Y_i^* \le \mu_4 \\ 5 & if\ Y_i^* > \mu_4 \end{cases} \quad 2$$

The ordered logit model assesses the likelihood that institutional performance is classified into a specific category:

$$p(Y_i \le j) = \frac{1}{1+e^{-(\mu_j - X_i\beta)}} \quad 3$$

where $X_i\beta$ represents the linear combination of explanatory variables.

Considering the hierarchical structure of the data, in which respondents are organized within agencies (such as the National Drug Law Enforcement Agency, Nigeria Police Force, NGOs/CSOs, legal experts, and PWUD groups), a multilevel ordered logistic model was estimated to serve as a robustness check.

Let i index individuals and j index agencies. The two-level random-intercept model specification is:

$$Y_{ij}^* = \beta_0 + \beta_1 \text{Coordination}_{ij} + \beta_2 Capacity_{ij} + \beta_3 Funding_{ij} + \beta_4 Agency_{ij} + \mu_j + \epsilon_{ij} \quad 4$$

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Where Y_{ij}^{*} is the latent performance for individual i in agency j. μ_j is random intercept measuring unobserved agency-level heterogeneity, while ϵ_{ij} is individual-level random error term. The random effect, $\mu_j \sim N(0, \sigma_u^2)$ accounts for variations in institutional performance that arise from differences among agencies. It is anticipated that β_1 and β_2 will be positive, as increased coordination is likely to elevate the chances of receiving higher institutional performance ratings, while an enhanced human resource capacity is expected to lead to improved performance. Also, β_3 is projected to be greater than 0, as a higher allocation of funding should bolster institutional effectiveness. The effects of agency type are expected to differ based on the specific mandates and operational focuses of the institutions.

The main estimation method employed is ordered logistic regression, utilizing cluster-robust standard errors at the agency level to address intra-agency correlation. To ensure robustness, the multilevel ordered logit model is applied to consider the nested nature of the data. Marginal effects were estimated to aid in the interpretation of the estimated coefficients, specifically regarding alterations in the predicted probabilities of achieving higher performance categories.

4.RESULTS

4.1 Performance and coordination of institutions responsible for SUD prevention in Nigeria

4.1.1 Performance of institutions responsible for SUD prevention in Nigeria

Table 1 reported the distribution of ratings given by respondents regarding institutional performance in the implementation of SUD prevention initiatives across various types of agencies. This analysis utilizes frequencies and percentages to shed light on the differences in performance among legal professionals, law enforcement agencies (including the National Drug Law Enforcement Agency), NGOs, civil society groups, and individuals who use drugs.

Table 1: Performance of institutions responsible for SUD prevention

	Institution (Agency Type)				Total
	Legal experts	Law enforcement authorities like NDLEA	NGOs and civil society organizations	People who use drugs (youths, adults, students, etc.)	
Very Poor (minimal or no SUD prevention activities implemented)	10 (35.71%)	4 (14.29%)	9 (32.14%)	5 (17.86%)	28 (100%)
Poor (limited activities with low effectiveness or coverage)	7 (30.43%)	8 (34.78%)	5 (21.74%)	3 (13.04%)	23 (100%)
Fair (some activities implemented with moderate effectiveness)	13 (16.67%)	49 (62.82%)	10 (12.82%)	6 (7.69%)	78 (100%)
Good (regular, structured activities with good effectiveness and coverage)	13 (9.77%)	89 (66.92%)	16 (12.03%)	15 (11.28%)	133 (100%)
Excellent (comprehensive, well-coordinated, and highly effective prevention activities)	1 (1.54%)	25 (38.46%)	26 (40.00%)	13 (20.00%)	65 (100%)
Total	44 (13.46%)	175 (53.52%)	66 (20.18%)	42 (12.84%)	327 (100%)

Source: Field survey, 2025

The findings generally suggested that institutional performance is more concentrated in the "Good" and "Fair" categories. In specific terms, 133 respondents (40.67%) evaluated the performance as Good, whereas 78 respondents (23.85%) classified it as Fair. Furthermore, 65 respondents (19.88%) rated the performance as Excellent. Conversely, a lesser number of respondents rated the performance as Very Poor (8.56%) and Poor (7.03%). This indicated that, in general, institutions tasked with SUD prevention are viewed as operating at moderate to high levels of effectiveness, although there remains room for performance enhancement.

Disaggregation by agency type uncovered significant differences. Law enforcement agencies represented the majority of "Good" ratings (66.92%) and a considerable percentage of "Fair" ratings (62.82%), suggesting that respondents viewed enforcement bodies as having a crucial role in the implementation of SUD prevention. Non-governmental organizations and civil society groups make a significant contribution to the "Excellent" category (40.00%), indicating effective performance in both structured and community-oriented prevention initiatives. Conversely, legal professionals seem to be more prevalent in the lower performance tiers, especially in the "Very Poor" (35.71%) and "Poor" (30.43%) categories, which may indicate their limited direct engagement in operational prevention efforts when compared to enforcement and civil society participants.

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Responses from PWUD revealed a varied perception. Although a proportion rated institutional performance as "Good" (11.28%) or "Excellent" (20.00%), a significant number also viewed performance as "Very Poor" (17.86%) or "Poor" (13.04%). This suggested that the experiences of beneficiaries may not align with institutional self-evaluations, underscoring possible gaps or discrepancies between policy execution and its effects at the community level.

In order to assess if there were significant differences in institutional performance among various agency types, both the Kruskal–Wallis rank test and one-way ANOVA were performed. The result is reported in Table 2.

Table 2: ANOVA and Kruskal–Wallis Tests of Inter-Agency Differences

Panel A: Kruskal–Wallis rank test					
Institution (Agency type)					**Rank sum**
Legal experts					4444.50
Law enforcement authorities such as the NDLEA and police force					29631.50
NGOs and civil society organizations engaged in substance misuse prevention					12041.50
People who use drugs in various categories (youths, adults, students, etc.)					7510.50
chi2(3) 23.631 (p = 0.0001) chi2(3) with ties 25.959 (p = 0.0001)					
Panel B: ANOVA Test					
Source	**Partial SS**	**df**	**MS**	**F**	**p-value**
Model	35.5374	3	11.8458	9.84	0.0000
Institution (Agency type)	35.5374	3	11.8458	9.84	0.0000
Residual	388.9273	323	1.2041		
Total	424.4648	326	1.3020		
R-squared 0.0837 Adj R-squared 0.0752					

Source: Field survey, 2025

The findings indicated that the performance of institutions varied significantly among different agencies. The Kruskal–Wallis test yielded a chi-square statistic of 23.631 (with ties: 25.959), which was found to be statistically significant at the 1% threshold ($p = 0.0001$). This suggested that at least one group of agencies exhibited a significant difference in performance rankings compared to the others. The rank sums revealed that law enforcement bodies, such as the National Drug Law Enforcement Agency and the Nigeria Police Force, achieved the highest overall performance rankings, followed by non-governmental organizations and civil society groups, whereas legal professionals and individuals who use drugs had relatively lower rank sums.

In a similar vein, the ANOVA findings validated the presence of statistically significant disparities in mean performance scores among different agency types ($F = 9.84$, $p < 0.001$). The model accounted for roughly 8.37% of the variation in institutional performance ($R^2 = 0.0837$), signifying that agency type played a significant, albeit not sole, role in the differences observed in perceived performance. In essence, both parametric and non-parametric analyses consistently indicated that institutional performance exhibited significant variation across agencies, implying inconsistent implementation capacity and effectiveness among the stakeholder groups engaged in SUD prevention efforts in Nigeria.

4.1.2 Level of Coordination among Institutions Responsible for SUD Prevention in Nigeria.

Table 3 reports the distribution of ratings provided by respondents regarding the level of coordination among institutions tasked with the prevention of SUD in Nigeria. The findings, derived from frequencies and percentages, indicated the variability of coordination among legal experts, law enforcement agencies (including the National Drug Law Enforcement Agency), NGOs, civil society groups, and people who use drugs.

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Table 3: Level of coordination among institutions responsible for SUD prevention

	Institution				Total
	Legal experts	Law enforcement authorities like NDLEA	NGOs and civil society organizations	People who use drugs (youths, adults, students, etc.)	
Very Poor (no coordination, agencies work in isolation)	4 (13.33%)	7 (23.33%)	4 (13.33%)	15 (50.00%)	30 (100%)
Poor (limited coordination, occasional communication, minimal joint activities)	18 (27.27%)	24 (36.36%)	17 (25.76%)	7 (10.61%)	66 (100%)
Fair (some coordination with occasional joint planning or meetings)	27 (20.30%)	72 (54.14%)	17 (12.78)	17 (12.78%)	133 (100%)
Good (regular coordination with joint programs and information sharing)	14 (11.76%)	68 (57.14%)	25 (21.01%)	12 (10.08%)	119 (100%)
Excellent (highly coordinated, formal partnerships, integrated planning, and effective collaboration)	-	11 (22.45%)	25 (51.02%)	13 (26.53)	49 (100%)
Total	63 (15.87%)	182 (45.84%)	88 (22.17%)	64 (16.12%)	397 (100%)

Source: Field survey, 2025

In general, the assessment of coordination was predominantly found within the "Fair" and "Good" categories. Specifically, 133 respondents (33.50%) classified coordination as Fair, whereas 119 respondents (29.97%) deemed it Good. Furthermore, 49 respondents (12.34%) regarded coordination as Excellent. Conversely, a significant number rated coordination as Poor (16.63%) or Very Poor (7.56%), highlighting challenges in coordination within certain sectors. This implied that although there is some level of inter-agency collaboration, it is not uniformly robust across various institutions.

Disaggregated findings indicated that law enforcement agencies represented the most significant proportion of the ratings categorized as "Fair" (54.14%) and "Good" (57.14%), underscoring their pivotal function in inter-agency collaboration. Non-governmental organizations and civil society groups led the "Excellent" category (51.02%), which suggested a more robust framework of formal partnerships and cooperative planning within that domain. Conversely, responses from people who use drugs reveals a significant prevalence in the "Very Poor" category (50.00%), implying that these beneficiaries might view agencies as functioning in a disconnected manner or lacking substantial integration within the community.

Legal professionals were predominantly found in the "Poor" (27.27%) and "Fair" (20.30%) categories, which could indicate a reduced engagement in daily coordination tasks when compared to enforcement and civil society participants. To assess if there were significant differences in coordination levels among various agency types, both the Kruskal–Wallis rank test and one-way ANOVA were performed. The findings are presented in Table 4.

Table 4: ANOVA and Kruskal–Wallis Tests of Inter-Agency Differences in Coordination

Panel A: Kruskal–Wallis rank test					
Institution (Agency type)					**Rank sum**
Legal experts					9652.00
Law enforcement authorities such as the NDLEA and police force					37123.50
NGOs and civil society organizations engaged in substance misuse prevention					20462.50
People who use drugs in various categories (youths, adults, students, etc.)					11765.00
chi2(3) 19.008 (p = 0.0003) chi2(3) with ties 20.470 (p = 0.0001)					
Panel B: ANOVA Test					
Source	**Partial SS**	**df**	**MS**	**F**	**p-value**
Model	24.7086	3	8.2362	7.11	0.0001
Institution (Agency type)	24.7086	3	8.2362	7.11	0.0001
Residual	455.4324	393	1.1588		
Total	480.1411	396	1.2124		
R-squared 0.0837 Adj R-squared 0.0752					

Source: Field survey, 2025

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The findings revealed that coordination varied significantly among different agencies. The Kruskal–Wallis test yielded a chi-square statistic of 19.008 (with ties: 20.470), which was statistically significant at the 1% threshold ($p = 0.0003$; $p = 0.0001$ when ties were considered). This indicated that at least one group of agencies exhibited a significant difference in coordination rankings compared to the others. The rank sums indicated that law enforcement bodies, such as the National Drug Law Enforcement Agency and the Nigeria Police Force, achieved the highest coordination rankings, followed by non-governmental organizations and civil society groups, whereas legal professionals and people who use drugs had relatively lower rank sums.

In a similar vein, the ANOVA analysis corroborated the presence of significant mean differences in coordination among various agency types ($F = 7.11$, $p = 0.0001$). The model accounted for approximately 8.37% of the variance in coordination levels ($R^2 = 0.0837$), suggesting that the type of agency contributed a significant proportion to the differences observed in perceived coordination. In essence, both parametric and non-parametric analyses consistently indicated that coordination levels exhibited significant variation across the institutions engaged in substance use disorder prevention in Nigeria.

4.1.2 Effect of Coordination on Institutional Performance

To investigate the extent to which coordination impacted institutional performance in SUD prevention, an ordered logistic regression model with cluster-robust standard errors was estimated as the primary analytical approach. Following this, a mixed-effects multilevel ordered logistic regression was conducted as a robustness check to address the nested structure of respondents within agencies, which includes institutions like the National Drug Law Enforcement Agency and the Nigeria Police Force. The results of the ordered and multilevel ordered logistic regression are displayed in Table 5, whereas the results for the marginal effects are shown in Table 5.

Table 5: Ordered and multilevel ordered logistic regression estimates

	Ordered Logistic Regression Estimates (Cluster-Robust Standard Errors)				**Mixed-Effects Multilevel Ordered Logistic Regression Estimates**			
	Coeff.	**Stand. Error**	**Z-Value**	**P-Value**	**Coeff.**	**Stand. Error**	**Z-Value**	**P-Value**
Coordination	0.5847	0.1071	5.46	0.000	0.6189	0.2243	2.76	0.006
Capacity	1.0417	0.1492	6.98	0.000	1.0091	0.2095	4.82	0.000
Funding	0.0024	0.0019	1.27	0.204	0.0021	0.0008	2.78	0.005
Agency Type					0.3296	0.3726	-	-
Law enforcement authorities	1.8693	0.4923	3.80	0.000				
NGOs and civil society organizations	1.1874	0.3191	3.72	0.000				
People who use drugs	1.9228	0.4883	3.94	0.000				
/cut1	4.3556	0.4943			3.0997	0.7501		
/cut2	5.2267	0.5594			3.9519	0.7631		
/cut3	7.2485	0.7903			5.9341	0.8421		
/cut4	9.1682	1.1768			7.8198	0.9431		
Pseudo R2	0.2310				-			
Wald chi2(3)	69.94 (p = 0.0000)				68.83 (p = 0.0000)			
LR test	-				chibar2(01) = 3.51 (p = 0.0305)			

Source: Field survey, 2025

Table 6: Marginal effects form ordered and Multilevel Ordered Logistic Regression Models

	Ordered logistic regression estimates (cluster-robust standard errors)				**Mixed-effects multilevel ordered logistic regression estimates**			
	Coeff.	**Stand. Error**	**Z-Value**	**P-Value**	**Coeff.**	**Stand. Error**	**Z-Value**	**P-Value**
Coordination	0.0428	0.0165	2.59	0.009	0.0673	0.0245	2.75	0.006
Capacity	0.0762	0.0361	2.11	0.035	0.1097	0.0258	4.25	0.000
Funding	0.0002	0.0002	1.03	0.303	0.0002	0.0001	3.23	0.001
Agency Type								
Law enforcement authorities	0.1761	0.0457	3.85	0.000	-	-	-	-
NGOs and civil society organizations	0.0989	0.0271	3.65	0.000	-	-	-	-
People who use drugs	0.1828	0.0471	3.88	0.000				

Source: Field Survey, 2025

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The results from the ordered logistic regression indicated that coordination positively and significantly influenced institutional performance ($\beta = 0.5847$, $p < 0.001$). This finding suggests that increased inter-agency coordination notably enhances the probability of reporting higher performance categories in SUD prevention activities. The positive and statistically significant result persisted in the multilevel model ($\beta = 0.6189$, $p = 0.006$), thereby affirming the robustness of the finding after considering agency-level heterogeneity. The Wald chi-square statistics for both models were statistically significant ($p < 0.001$), demonstrating that the models were jointly significant.

Additionally, institutional capacity had a strong positive and significant impact on performance in both models ($p < 0.001$). This implied that institutions with sufficient human resources were significantly more likely to report higher levels of SUD prevention implementation. The results regarding funding were mixed: it was not statistically significant in the primary ordered logit model ($p = 0.204$), but it became positive and statistically significant in the multilevel specification ($p = 0.005$), suggesting that the effects of funding became clearer when agency-level clustering was explicitly accounted for.

In terms of agency type, the ordered logit results revealed that law enforcement authorities, NGOs, civil society organizations, and people who use drugs exhibited significantly higher odds of reporting superior performance compared to the reference category (legal experts), with p-values below 0.01. This corroborated previous descriptive findings indicating that institutional performance differed across agency groups.

The marginal effects offered clearer interpretations. In the primary ordered logit model, a one-unit rise in coordination led to an increase in the likelihood of reporting the highest performance category by 4.28 percentage points ($p = 0.009$). In the multilevel model, this effect was even more pronounced at 6.73 percentage points ($p = 0.006$). Likewise, enhancements in institutional capacity raised the probability of achieving higher performance by a range of 7.62 to 10.97 percentage points, contingent on the specification. Funding exhibited a modest yet statistically significant marginal effect within the multilevel model. The agency-type marginal effects further indicated that law enforcement authorities and people who use drugs were approximately 17–18 percentage points more inclined to report higher performance compared to legal experts.

The likelihood ratio test for the multilevel model yielded statistically significant results ($p = 0.0305$), suggesting that the incorporation of random agency-level effects enhanced the model's fit. In essence, the consistency of findings across both specifications illustrated that coordination had a significant and positive impact on institutional performance in substance use disorder (SUD) prevention in Nigeria, even when accounting for capacity, funding, and agency type.

4.2 Summary and discussion of Findings

It was found that the performance of institutions in the prevention of SUD in Nigeria was generally rated as moderate to good. Law enforcement agencies and non-governmental organizations were viewed as performing better than other stakeholder groups, although there was notable inconsistency in performance across various institutions. Additionally, it was observed that institutional performance varies significantly among different types of agencies, with law enforcement bodies and NGOs demonstrating significantly better performance compared to other stakeholder groups. It was also found that the level of coordination among institutions involved in SUD prevention in Nigeria was generally moderate, ranging from fair to good. However, significant gaps persist, especially from the viewpoint of people who use drugs, who regarded the coordination as weak or fragmented. The level of coordination was also found to vary significantly across agency types, with law enforcement authorities and NGOs indicating stronger coordination than legal experts and people who use drugs. Furthermore, it was discovered that enhanced coordination among institutions significantly enhanced the likelihood of improved performance in SUD prevention, even when accounting for factors such as capacity, funding, and agency type.

The results correspond with an expanding collection of empirical studies indicating that institutional coordination and multisectoral collaboration are pivotal factors influencing performance in public health systems; however, these elements remain inconsistent across numerous low and middle-income country contexts. For example, Ezenwaka, Mbachu, & Onwujekwe (2025) who examined public health coordination mechanisms in Nigeria and Africa also found disjointed coordination, ineffective communication, and insufficient integration among stakeholders, which hindered the successful implementation of health initiatives. In Kenya, Nyawira et al., (2023) also discovered that while formal coordination frameworks were in place, issues such as duplication, fragmentation, and misalignment of roles adversely affected health system coordination and efficiency, reinforcing the findings of moderate and uneven coordination. These recurring trends imply that the challenges associated with coordination were not exclusive to SUD prevention but rather indicative of more extensive governance and capacity limitations within multisectoral public health efforts.

Several factors may elucidate why the coordination of SUD prevention in Nigeria remains moderate and varies among different agencies. Firstly, the institutional mandates and resource allocations significantly differ among stakeholders, with law enforcement and non-governmental organizations frequently enjoying more substantial operational support and clearer directives compared to advisory groups or service users. This disparity results in enhanced coordination in areas where capacity is more robust. Secondly, structural impediments such as inadequate policy communication, a lack of shared planning platforms, and ineffective accountability mechanisms have been recognized in related public health coordination research as contributors to fragmented collaboration

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(Ezenwaka et al., 2025). Also, the viewpoints of service beneficiaries, including people who use drugs, may mirror their lived experiences of disjointed services at the community level, where formal coordination efforts do not consistently lead to integrated outreach, a trend that has been documented in other health coordination literature (Ezenwaka et al., 2025; Nyawira et al., 2023).

Significant implications of the findings are that efficient coordination can lower transaction costs, eliminate redundant efforts, and enhance resource distribution, resulting in a more effective utilization of limited public resources. Conversely, inadequate coordination is linked to inefficiencies that may escalate program expenses and weaken outcomes, as evidenced by regional studies that poor coordination in the health sector with potential inefficiencies in service delivery (Nyawira et al., 2023; turn1search16). In terms of policy, improved institutional coordination in SUD prevention could boost economic productivity by alleviating the social and health impacts of substance use, a finding that is consistent with extensive health systems research indicating that multisectoral initiatives enhance health system performance and service readiness, despite the fact that evidence regarding direct changes in health outcomes is still developing (Sutarsa, 2024).

5.CONCLUSION AND RECOMMENDATIONS

Based on the research findings, it can be inferred that the performance of institutions in the prevention of SUD in Nigeria is generally rated as moderate to good. However, there is significant variation among different agencies, with law enforcement bodies and non-governmental organizations exhibiting superior performance compared to other stakeholder groups. Coordination among institutions exists at levels deemed fair to good, yet it remains inconsistent and fragmented, particularly from the viewpoint of people who use drugs. This situation underscores deficiencies in integrated planning and collaborative implementation. Crucially, it was observed that enhanced levels of coordination significantly improve institutional performance, even when factors such as capacity, funding, and agency type were taken into consideration. This finding emphasizes the vital importance of inter-agency collaboration in augmenting the effectiveness of SUD prevention initiatives. From an economic perspective, bolstering coordination and institutional capacity could lead to improved resource efficiency, a reduction in redundancy, and an overall enhancement of the impact of prevention strategies. This suggests that strategic investments in multisectoral collaboration could provide considerable advantages for public health outcomes and social productivity in Nigeria.

With the findings that improved coordination greatly enhances institutional effectiveness, yet acknowledging existing gaps, it is imperative for the government and relevant stakeholders to create formalized, institutional coordination platforms. These platforms should promote regular collaborative planning, information exchange, and oversight among law enforcement agencies, non-governmental organizations, civil society groups, and other relevant entities. Potential initiatives could encompass inter-agency task forces, unified reporting systems, and regular coordination meetings to guarantee the synchronization of substance use disorder (SUD) prevention efforts across various institutions. Also, given the positive association between institutional capacity and performance, it is essential that policies prioritize the enhancement of human and financial resources within agencies dedicated to SUD prevention. This may entail the implementation of specialized training programs for personnel, the hiring of expert staff, and the provision of increased financial resources to ensure that institutions possess the necessary capacity to implement effective and sustainable SUD prevention initiatives.

Further research could investigate the effects of inter-agency coordination on the actual outcomes of SUD prevention initiatives in Nigeria, focusing on both behavioral and health outcomes within the target populations. This would go beyond mere perceptions of performance and coordination, aiming to determine if enhanced collaboration among institutions leads to quantifiable decreases in substance use, increased treatment uptake, or improved health outcomes at the community level. Also, it could also explore the ways in which coordination affects effectiveness, including aspects such as resource sharing, collaborative program implementation, or alignment of policies.

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